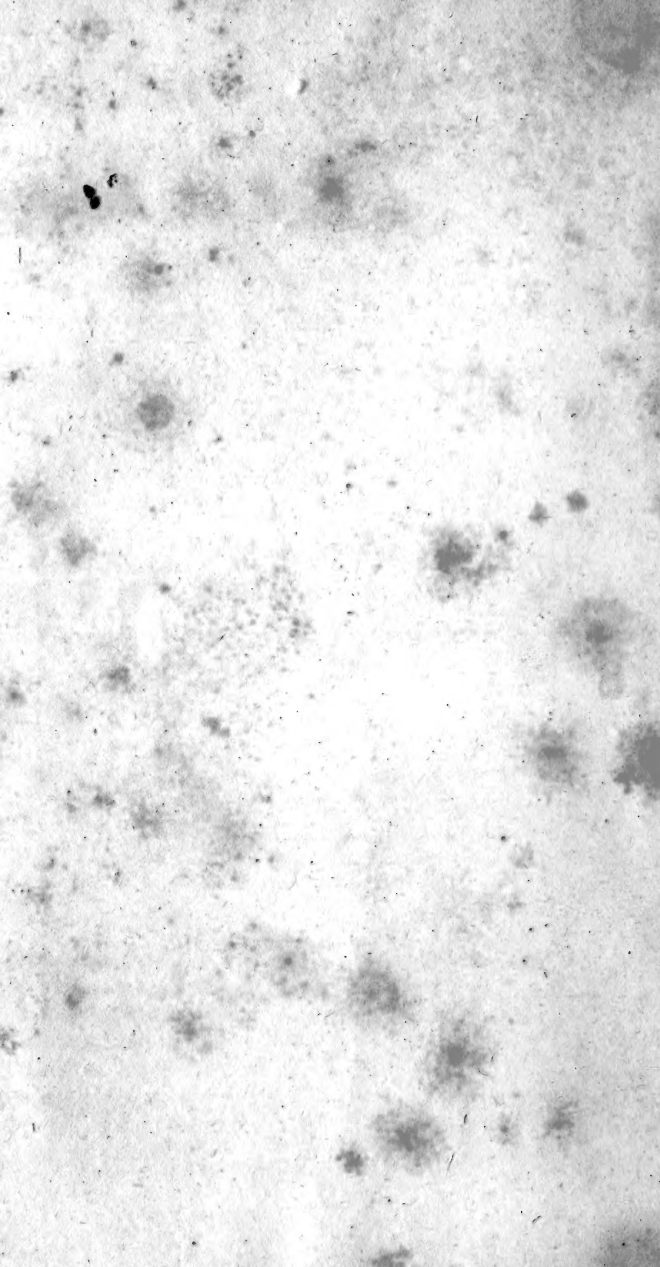


Deposited April 27th

~~1833~~ 1833



THE
**YOUNG GARDENER'S
ASSISTANT:**

CONTAINING A CATALOGUE OF
Garden and Flower Seeds,
WITH PRACTICAL DIRECTIONS UNDER EACH HEAD,
FOR THE CULTIVATION OF
CULINARY VEGETABLES

AND
FLOWERS.

FOURTH EDITION WITH AN APPENDIX
CONTAINING DIRECTIONS FOR CULTIVATING FRUIT TREES AND
THE GRAPE VINE, &c. &c.

BY *T. Bridgeman*
T. BRIDGEMAN,
GARDENER, SEEDSMAN AND FLORIST, NEW-YORK.

"The end of all instruction, should be the attainment of useful
knowledge."




New-York:

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and S. Woods & Sons, Booksellers.

1833.

 One half of this edition is bound up with the Appendix on Fruits, &c., and the remainder without, to suit purchasers.

1570.

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ADVERTISEMENT

TO THE FOURTH EDITION.

It is presumed, that this edition of the "Young Gardener's Assistant," will be found generally useful to such as may wish to superintend, or take the management of their own gardens. The Author's object, as stated in the Preface to the first edition, has been satisfactorily accomplished, which the following statement of facts will show :

One hundred and fifty copies of that edition were retailed, at the seed store of Messrs. Thorburn & Sons, within a month after it was published, and subsequently, upwards of six hundred.—Messrs. Smith & Co., and other Seedsman in New-York, have also been successful in circulating many hundreds of them, and the author has been gratified by learning, that the publisher of the last edition placed upwards of six hundred copies in the hands of the public, within three months after they came from the press.

The author might here cite the opinions of many practical gardeners in favour of the work, but after the encouragement given to previous editions, he is perfectly willing that the present one should speak for itself. Indeed, to enumerate all the commendations passed on this humble attempt to promote useful knowledge, would exceed our limits. Suffice it to state, that the work has been respectfully noticed and recommended to public patronage, by the editors of the following periodicals: The New-York Advocate and Journal, American, Commercial, Courier and Enquirer, Evening Post, Gazette, Standard and Traveller, the New-York Farmer, the American Farmer, and the Albany Argus, besides many of those periodical publications, devoted to agricultural pursuits, in different parts of the country.

It appears from an article in the New-York Farmer and Horticultural Repository, that this little work has been noticed in France. The editor informs us, in page 295 of the 4th volume, dated Nov. 10, 1831, that "one of the leading articles in the second number of the present volume of the '*Annales de L'Institute Royal Horticole de Fromont*' is a long notice of the Young Gardener's Assistant, by Mr. Thomas Bridgeman, of this city. The editor, Le Chevalier Soulange Bodin, speaks of the little work in very commendable terms."

It is not pretended that this work contains copious directions, calculated to make every man a nurseryman, or propagator of exotic plants; but the author flatters himself, that it will be found to contain sufficient information for those who may wish to be-

come their own gardeners. The directions for the cultivation of vegetables, are the result of thirteen years assiduous practice and observation, as a market gardener; and it is presumed that the author's experience in other departments of gardening, has been sufficient to warrant him in this attempt to instruct those who have not hitherto become acquainted with the art. The author considers it not derogatory to acknowledge, that he has frequently compared his ideas with those of other authors, and that he has, in some instances, availed himself of the benefit of their instructions; but he is not aware, that in so doing, he has adopted any ideas merely speculative; to avoid which, he has invariably submitted such manuscript to the scrutiny of aged and experienced gardeners, of his acquaintance, and the result has generally been such as to confirm him in his original positions.

It must appear evident to the reader, on a review of this little work, that the author, in adopting the catalogue form, has been enabled to give as much information as is necessary to the cultivation of each particular kind of vegetable, in a condensed form; whereas, had he pursued the same course as most of his predecessors have done, his book would have been considerably larger, and the reader must have been at the trouble of perusing the greater part of it, at least twelve times in the course of a year.—The author, however, being aware of the convenience of a calendar, has, in this edition, annexed a short one, with a view to assist the memory of the gardener, and to show him, at one glance, that he may find employment in some of the departments of gardening in every month in the year.

The author, having shown his primary object in adopting the catalogue form, presumes that his readers will not be disappointed, if they do not find there the names of all the species or *varieties* of plants they may wish to introduce into their gardens, the mode of culture of such being generally alike. If a catalogue of this kind was essential, it would occupy more space than is allotted for this book; besides, it would be impossible to keep pace with our enterprising Horticulturists and Flerists, who are continually introducing new species into our country. When, also, it is considered that there are a number of indigenous plants at present unknown to us, it will appear evident, that the most extensive catalogue would not be perfect in this respect, for any length of time. The author, therefore, thought it unnecessary to attempt any thing more, than that which is essential to the attainment of a tolerable share of the products of the garden, by ordinary exertion. How far he has succeeded in this respect, must be left for the reader to decide.

THOMAS BRIDGEMAN.

Bowery Road, March, 1833.

PREFACE

TO THE FIRST EDITION.

THE object of this little work is to enable our respectable seedsmen, while they are furnishing a catalogue of seeds for the use of the Kitchen and Flower Garden, to afford instructions at a trifling expense to such of their customers, as may not have a regular gardener, and thereby save themselves the blame of those who may not give their seeds a fair trial, for want of knowing how to dispose of them in the ground.

The author being a seedsman himself, is aware that however anxious his fellow tradesmen may be to sell such seeds as will please their customers, they are sometimes charged with dishonest intentions from the failure of seeds, when the fault lies not with them, but with the gardener. He will endeavor, therefore, in his humble way, to render himself useful, both to the seedsman and the gardener, by giving brief directions for the management of the Kitchen Garden, in such a way as to insure success. In doing this he would remind the public, that as brevity must be consulted in this work, he cannot be expected, in a few pages to do that justice to a subject which is only to be found in the books of eminent horticulturists. He hopes, however, to be sufficiently explicit to give his readers a taste for the pleasurable and profitable, as well as healthful employment of gardening, and thereby lead them to the perusal of other works of a more extensive nature. He also intends to devote a few

pages to the attention of our fair country women and direct them to a rational and delightful recreation. To this end he will, (after furnishing a catalogue of some of the most esteemed kinds of flower seeds,) give brief directions for promoting the growth of these seeds, while in the seed bed, leaving it to their own good taste and judgment to arrange the plants of those beauties of nature, so as to set them off to the best advantage.

The Author is aware that the occupation of gardening is attended with difficulties, but he flatters himself that in proportion as his readers feel interested in the welfare of their vegetable progeny, in like proportion will they obtain pleasure and satisfaction in their successful employment. To obtain this, he would recommend them to make up their minds as to what vegetables or flowers they intend to introduce into their gardens, and then, after having procured good seeds, let them have every suitable implement ready to begin the work at the proper seasons for preparing and planting the garden. These will be shown in the following pages, interspersed with directions on some other important subjects connected with this undertaking.

T. BRIDGEMAN.

Bowery Road, January, 1829.

GENERAL REMARKS.

ON THE MANAGEMENT OF A KITCHEN GARDEN.

BEFORE I commence the Catalogue, it may be necessary for me to direct the reader's attention to some important matters essential to the good management of a Kitchen Garden.

The mode of laying out the ground, is a matter of taste, and may be left to the gardener himself ; the form being a thing of trifling importance in the production of useful vegetables, or whether the ground be laid out in beds of four or ten feet wide, provided it be well worked, and the garden kept neat and free from weeds.

Those who have not a garden already formed, should, however, fix on a level spot where the soil is deep ; but as we have not always a choice, I would recommend the reader to that which is within the reach, and ought to be the object of every man, namely, to make the most of what he has.

To this end, he may form a border round the whole garden, from five to ten feet wide, according to the size of the piece of land ; next to this border, a walk may be made from three to six feet wide ; the centre part of the garden may be divided into squares, on the sides of which a border may be laid out three or four feet wide, in which the various flowering plants may be raised, unless a separate flower garden is intended. The centre beds, may be planted with all the various kinds of vegetables as well as Gooseberries, Currants, Raspberries, Strawberries, &c. The outside borders facing the

East, South and West, will be useful for raising the earliest fruits and vegetables, and the North border being shady and cool, will serve for raising, and pricking out such young plants, slips and cuttings as require to be screened from the intense heat of the sun. It may be necessary to state further, that though shady situations are useful for the purpose of raising Celery, Cabbage and other small plants, slips &c., in the summer season, that all standard trees should be excluded from a Kitchen Garden, for the following reasons:—First, their roots spread so widely and imbibe so much moisture from the ground that little is left for the nourishment of any plant within the range of their influence;—Secondly, when in full leaf they shade a large space and obstruct the free circulation of air, so essential to the well being of all plants;—Thirdly, the dropping of trees is particularly injurious to whatever vegetation it falls upon.

Previous to entering on the work of the garden, the gardener should lay down rules for his future government. In order to this, he should provide himself with a blank book. In this book he should first lay out a plan of his garden, allotting a place for all the different kinds of vegetables he intends to cultivate. As he proceeds in the business of planting his grounds, if he were to keep an account of every thing he does relative to his garden, he would soon obtain some knowledge of the art. This the writer has done for the last twelve years, and he flatters himself that a publication of the results of his practice, will be interesting and useful to his readers.

If gardeners were to make it a rule to record the dates and particulars of their transactions relative to tillage and planting, &c., they would always know when to expect their seeds to come up, and

how to regulate their crops for succession ; and, when it is considered that plants of the *Brassica* or Cabbage tribe, are apt to get infected at the roots if too frequently planted in the same ground, and that a rotation of crops in general is beneficial, it will appear evident that a complete register of every thing relative to culture is essential to the well being of a garden.

One great article to be attended to is, to have a supply of good old manure and other composts ready to incorporate with the earth ; also a portion of ashes, soot, tobacco dust and lime, for the purpose of sowing over seed beds in dry weather ; this will tend in a great measure to destroy insects, which sometimes cut off the young plants as fast as they come up.

If the ground cannot be all manured every year as it should be, it is of primary importance that those vegetables be provided for which most need manure. A perusal of the catalogue will enable the young gardener to judge of the kinds of garden products which require most. Lest I should not have been explicit enough in this particular, I would inform him, that good rich manure is indispensably necessary for the production of Brocoli, Cauliflower, Cabbage, Lettuce, Spinage, Onions, Radishes and Salads in general.

In the event of a scanty supply of manure, those kinds of vegetables which are raised in hills or drills, may be provided for by disposing of the manure immediately under the seeds or plants.

The next important matter is to have ground in suitable condition to receive the seed. I would wish it to be understood, that I am an advocate for early sowing and planting, even at the risk of losing a little seed, provided the ground be fit to receive it. A light sandy soil will be benefitted if

worked when moist, as such treatment will have a tendency to make it more compact; on the contrary, if a clay soil be worked when too wet, it kneads like dough, and never fails to bind when drought follows, and this not only prevents the seeds from rising, but injures the plants materially in their subsequent growth, by its becoming impervious to the moderate rains, dews, air and influence of the sun, all which are necessary to the promotion of vegetation.

Some gardeners, as well as some writers, recommend certain fixed days for sowing and planting particular kinds of seeds; I think it necessary to guard my readers from being misled. The failure of crops may be often attributed to the observance of certain days for sowing. If some kinds of seeds be sown when the ground is wet and cold, they will become chilled in the ground, and seldom vegetate. If they be sown in very dry weather, the germinative parts of the seed may become injured by the burning rays of the sun, or the young plants may get devoured by insects as fast as they come up. To obviate these difficulties, I have generally allowed a week or ten days for the sowing of the seeds, intending the medium as the proper time for the vicinity of New-York. With this clearly borne in mind, the reader, who observes the difference in the degrees of heat and cold in the different parts of the country, will know how to apply these instructions accordingly.

Much depends on the manures used on particular kinds of soils. The great art of improving sandy and clayey soils, is to give the former such dressings of clay, cow dung and other kinds of manure, as will have a tendency to bind and make them more compact, and consequently more retentive of moisture; and to the latter, coats of horse dung, ashes,

sand, and such other composts as may tend to separate the particles and open the pores of the clay so as to cause it to approach as near as possible to a loam.

The nearer the ground approaches to a sandy soil, the less retentive will it be of moisture ; the more to a clayey, the longer will it retain it ; and the finer the particles of which the clay is composed, the more tenacious will it be of water, and consequently be longer in drying, and the harder when dry ; but earth of a consistence that will hold water the longest, *without becoming hard when dry*, is that of all others, the best adapted for raising the generality of plants in the greatest perfection. This last described soil is called loam, and is a medium earth, between the extremes of clay and sand.

I have in most cases recommended drills to be made at certain depths for the different kinds of seeds, and when I have stated that the drills should be two inches deep, it is intended that the seeds should be covered only one inch, which they will be when planted in these drills and covered—and so in proportion for any other depth required. This may serve as a guide to the young gardener, but circumstances alter cases ; if for instance, some particular crops should fail, this would render it necessary, if the season be far advanced, to risk a further planting of seeds, even if the weather be hot and the ground dry ; if these be planted a little deeper, they may escape the violent heat of the sun, and in the event of a shower, the ground would become sufficiently moist to bring them up ; whereas, it sometimes happens, that seed sown after a shower do not vegetate until after the season is too far advanced to bring the crop to perfection.

The work of drilling may be performed in various ways ; in some cases a plough is used, in others a

small hoe, or a dibble drawn along the edge of a board or line ; it is of little consequence which way the work is done, if it be well done. While I leave the gardener to make his own choice of tools, I would suggest that he be provided with two or three drilling machines ; these, every handy man may make for himself ; they should be in the form of a garden rake, with a stout heavy back and five teeth two inches broad, and tapered so as to enter the ground and leave drills two inches deep. If one be made with the teeth eight inches apart, another twelve, and another fourteen, they will be useful in making drills for various seeds, and drills thus made, serve instead of straining a line, for every row in planting Cabbage, Lettuce, Leeks, &c., the line being strained at one edge of the bed, and the drilling machine drawn strait by the line, makes five drills at once. If they are straight they may be kept so, by keeping one drill open for the outside tooth to work in until the ground be all drilled.

Gardeners practice different methods of covering up seeds, some do it with a hoe, others with a rake or harrow ; some draw a portion of the earth to the side of the bed, and after sowing the seeds, return it regularly over the bed ; in some particular cases a sieve is used, in others a roller. Rolling or treading in seeds is necessary in dry seasons, but it should never be done when the ground is wet.

There is nothing that protects young crops of Turnips, Cabbages and other small plants from the depredations of the fly, so well as rolling ; for when the surface is rendered completely smooth, these insects are deprived of the harbour they would otherwise have under the clods and small lumps of earth. This method will be found more effectual than soaking the seed in any preparation, or dusting the plants with any composition whatever ; but as the

roller must only be used previous to, or at the time of sowing the seed, and not even then if the ground be wet; it is necessary that the gardeners should have a hogshead always at hand in dry weather containing infusions made of waste tobacco, lime, soot, cow dung, elder, burdock leaves, &c. A portion of these ingredients, or any other preparation that is pernicious or poisonous to insects, without injuring the plants, thrown into a hogshead kept filled up with water, if used moderately over beds of young plants in dry weather, would, in almost every case, insure a successful crop.

As liquid however cannot be conveniently used on a large piece of land, it may be necessary, if insects are numerous, to sow tobacco dust mixed with road dust, soot, ashes, lime or the dust of charcoal, in the proportion of half a bushel per acre, every morning, until the plants are free or secure from their attacks. Turnip seed will sometimes sprout in forty eight hours, Cabbage seed ought to come up within a week after it is sown; but it sometimes happens that the whole is destroyed before a plant is seen above ground; the seedsman, in this case, is often blamed without a cause. A correspondent has communicated the result of an experiment he has tried for preventing the attacks of flies or fleas on Turnips. He says, steep your seeds in a pint of warm water for two hours, in which is infused 1 oz. of saltpetre; then dry the seed and add currier's oil sufficient to wet the whole, after which mix it with plaster of Paris so as to separate and render it fit for sowing.

In the summer season, Brocoli, Cabbage, Cauliflower, &c., are particularly subject to the ravages of grubs and caterpillars; to prevent this wholly is perhaps impossible, but it is not difficult to check these troublesome visitors; this may be done, by

searching for them on their first appearance and destroying them ; early in the morning grubs may be collected from the earth, within two or three inches of such plants as they have attacked the night previous. The approach of caterpillars is discoverable, on the leaves of Cabbages, many of which are reduced to a thin white skin, by the minute insects which emerge from the eggs placed on them ; these leaves being gathered and thrown into the fire, a whole host of enemies may be destroyed at once ; whereas, if they are suffered to remain, they will increase so rapidly, that in a few days, the plantation, however extensive, may become infested ; now, when once these arrive at the butterfly or moth stage of existence, they become capable of perpetuating their destructive race to an almost unlimited extent. The same remarks apply to all other insects in a torpid state. Worms, maggots, snails or slugs, may be driven away by sowing salt or lime in the Spring, in the proportion of from two to three bushels per acre, or by watering the soil occasionally with salt and water, to the quantity of about two pounds of salt to four gallons of water ; or the slug kind may be easily entrapped on small beds of plants, by strewing slices of turnip on them late in the evening ; the slugs or snails will readily crowd to them, and may be gathered up early in the morning (before sunrise) and destroyed.

If it be necessary at any time to sow seeds in dry weather, it is recommended to soak the seeds in water mixed with sulphur. This practice, with attentive watering, will cause the seed to vegetate speedily.

Many kinds of seeds such as Asparagus, Capsicums, Celery, Fetticus, Leeks, Lettuce, Onions, Parsnip, Parsley, Rhubarb, Salsify, Spinage, and other light seeds will not vegetate freely unless the

ground be watered, or rolled ; where there is no roller on the premises, the following may answer for small beds as a substitute : after the seed is sown and the ground well raked, take a board (or boards) the whole length of the bed, lay them flat on the ground, beginning at one edge of the bed, walk the whole length of the board, this will press the soil on the seed, then shift the boards till you have thus gone over the whole bed. In the absence of boards, tread in the seed with your feet, or strike on the beds with the back of your spade, or shovel.

If it should be requisite to transplant any thing when the ground is dry, the transplanting should be always done as soon as the earth is fresh turned over, and the roots of the plants should be steeped in mud made of rich compost, before they are set out.

I have in most cases recommended seeds to be sown in drills drawn from 8 to 12 inches apart, in preference to sowing broadcast, because the weeds can be more easily destroyed by means of a small hoe ; and which, properly used, greatly promotes the growth of young plants.

The following table maybe useful to the gardener in showing the number of plants, or trees, that may be raised on an acre of ground, when planted at any of the undermentioned distances.

Distance apart.	No. of Plants.	Distance apart.	No. of plants.
1 foot,	43,560	9 feet	537
1 1-2 feet,	19,360	12 feet,	302
2 feet,	10,890	15 feet,	193
2 1-2 feet,	6,969	18 feet,	134
3 feet,	4,840	21 feet,	98
4 feet,	2,722	24 feet,	75
5 feet,	1,742	27 feet,	59
6 feet,	1,210	30 feet,	48

The preceding table may serve as a guide to such as are not expert in arithmetic, in laying out a garden, as it shews at one view many proportions of an acre of land, in squares of different dimensions. The last line, for instance, shews, that if 48 trees be planted on an acre, each thirty feet apart, that there may be forty-eight beds of thirty feet square or thirty beds of forty-eight feet square, formed from the same quantity of land. An allowance of about one eighth must however be made from the above calculation for walks and paths.

The table may also serve to show the gardener how to dispose of any given quantity of manure, that may be allotted for an acre of ground. If, for instance, it requires three hundred and two trees to plant an acre when placed twelve feet from each other, it will require as many heaps of manure to cover the same quantity of ground, if dropped the same distance apart. It therefore follows that if one hundred loads be allowed to the acre, each load must be divided into three heaps. If seventy five loads only be allowed, every load must be divided into four heaps, and so on in proportion to the quantity allowed. But if the gardener should choose to drop his heaps, five paces, or fifteen feet apart, he may make such distributions of his loads as to have one hundred and ninety-three heaps on the acre of land; in which case by dividing each load into four heaps he will require only forty-eight loads to cover the acre, and he may decrease the quantity still more, by allowing greater distances from heap to heap, or by dividing his loads into smaller proportions so as to accommodate himself to whatever quantity of manure he may allot to cover any given quantity of ground.

CATALOGUE, &c.

ARTICHOKE. ARTICHAUT. *Cynara*.

VARIETIES.—*There are two principal varieties or species of the Garden Artichoke;—the Cynara Scolymus or French Artichoke, and the Cynara Hortensis or Globe Artichoke.*

It is a perennial plant, producing from the root annually its large squamose heads, in full growth, in England, in June or July, until October or November. The Globe Artichoke, which produces large globular heads, is best for general culture, the heads being considerably larger, and the eatable parts more thick and fleshy.

Both sorts may be raised from the seed, or young suckers from the bottom taken off in the spring. A plantation of Artichokes will continue to produce good heads six or seven years, and sometimes longer; but it must be observed, that if a supply of this delicious vegetable be required throughout the season, a small plantation should be made from suckers every spring for a successive crop, as the young plants will not produce their heads in perfection till after the crops of the old standing ones are over.

The most likely way to obtain a supply of Artichokes in this country, is to sow the seed in the latter end of March, or early in April, in a bed of good rich earth, or it may be planted in drills one inch deep, and about twelve inches apart. The ground should be light and moist, not such as is apt to be-

come bound up by heat, or that in consequence of too large a proportion of sand, is likely to become violently hot in summer, for this is extremely injurious to these plants. After the plants are up, they should be kept free from weeds, and the earth often loosened around them.

At the approach of winter they should be covered up with straw, leaves, or light dry litter, and they will be fit to transplant in the following spring ; or the business of transplanting may be performed in cloudy or wet weather, at any time after the plants are from nine to twelve inches high. Having fixed upon a proper soil and situation, lay on it a good quantity of rotten dung, and trench the ground one good spade or eighteen inches deep, incorporating the manure therewith ; this being done, take up the plants, and after shortening their tap roots a little, and dressing their leaves, plant them with a dibble, in rows five feet asunder, and two feet plant from plant in the row, leaving part of their green tops above ground, and the hearts of the plants free from any earth over them, and give each plant a little water to settle the roots.

The following method of planting Artichokes is practiced in Berkshire, (Eng.) : The plants are placed in rows three feet and a half or four feet apart in the rows, and so deep that a basin may be formed round each plant, as it is fond of water, and in the Fall these basins are filled up by drawing the earth into them, and the plant is covered up two or three inches, by rounding up the earth over it.

Some make new plantations with the seeds at once ; this may be done by preparing the ground as above, and sowing a few grains of good fresh seed in each spot where a plant might be set, covering them about three quarters of an inch deep, and then, by marking each spot with a peg stuck in the

ground, the vacant places may be planted with Cauliflower, Cabbage Plants, Dwarf Beans, Lettuce, &c., taking care to keep the plants at a sufficient distance from the young Artichokes.

The winter dressing of Artichokes is an important operation ; on it depends much of their future success. This should not be given them as long as the season continues mild, that they may have all possible advantage of growth, and be gradually inured to the increasing cold weather ; but it should not be deferred to the setting in of hard frost, lest the entire work be lost.

In the first place, cut all the large leaves close to the ground, leaving the small ones which rise from the hearts of the plants ; after this, line and mark out a trench in the middle, between each row, from fourteen to sixteen inches wide, presuming that the rows are five feet apart, as directed. Then lightly dig the surface of the beds from trench to trench, burying the weeds, and as you proceed, gather the earth round the crowns of the plants to the height of about six inches, placing it in gently between the young rising leaves, without burying them entirely under it ; this done, dig the trenches one spade deep, and distribute the earth equally between and on each side of the plants, so as to level the ridges, giving them at the same time a neat rounding form ; finish by casting up with a shovel the loose earth out of the bottom of the trenches evenly over the ridges, in order that the water occasioned by heavy rains, &c., may immediately run off ; on which account the trenches ought to have a gentle declivity, as the lodgement of water about the roots in winter, is the greatest evil and danger they have to encounter, even greater than the most severe frosts we are subject to.

The beds are to remain so, until there is an appearance of hard frost, when they should be covered with light dry litter, straw, leaves of trees, or the like, the better to preserve the crowns and roots from its rigour. In this manner, the roots will remain in perfect safety all the winter. As soon as the very severe frosts are over, the beds must be uncovered, and when you perceive the young shoots begin to appear above ground, or rather one or two inches up, then, and not before, proceed to levelling down the beds into the alleys or trenches, rounding them in a neat manner; then dig and loosen all the earth round the plants; at the same time, examine the number of shoots arising on each stool or root, selecting three of the strongest and *healthiest looking* on every stool to remain; all above that number are to be slipped off close to the roots with the hand, unless you want such to make new plantations with, in which case, any extra number for that purpose are to remain on the mother plants, until they are about eight or ten inches high from their roots, or junction with the old plants, when they are to be slipped off and planted in a bed prepared in the same manner as directed for the young plants, taking care at the same time to close the earth about the crowns of the roots, and drawing it a little up to the remaining suckers.

Observe, the Spring dressing is to be given when the plants are in the above described state, whether that happens in February, March or April, occasioned by the difference of climate, or the earliness or lateness of the Spring.

The gardeners, near London, generally take off the side suckers, or small Artichokes, when they are about the size of a hen's egg. These meet with a ready sale in the markets, and the principal heads that are left are always larger and handsomer. The

maturity of a full grown Artichoke is apparent by the opening of the scales ; and it should always be cut off before the flower appears in the centre ; the stem should be cut close to the ground at the same time.

When your Artichoke plantations want manure, lay on a coat of old rotten dung, previous to the digging of the trenches in November, and cover it over with the earth as you throw it up ; in the spring following, dig it in.

ASPARAGUS. ASPERGE. *Officinalis.*

VARIETIES.—*Gravesend—Battersea—Large White Reading.*

Asparagus plants may be raised by sowing the seeds in the Fall as soon as ripe, or in March, and the early part of April. It requires some of the best ground in the garden. The seed may be sown in drills, ten or twelve inches asunder, and covered half an inch with light earth. When the plants are up they will need a careful hoeing, and they should afterwards be kept free from weeds.

The seed sown in the Fall generally makes the strongest plants, and will be fit to transplant into beds when they are a year old.

A plantation of Asparagus, if the beds are properly dressed every year, will continue to produce good buds for twenty years or more.

New plantations of Asparagus may be made in the months of March and April. The ground for the bed must not be wet, nor too strong or stubborn, but such as is moderately light and pliable, so as it will readily fall to pieces in digging or raking, and in

a situation that enjoys the full sun. It should have a large supply of good rotten dung three or four inches thick, and then be regularly trenched two spades deep, and the dung buried equally in each trench, twelve or fifteen inches below the surface. When this trenching is done, lay on two or three inches of well rotted manure all over the surface, and dig the ground over again, eight or ten inches deep, mixing this top dressing, and incorporating it well with the earth. The ground being thus prepared and laid level, divide it into beds four feet and a half wide, with alleys two feet wide between each bed.

At each corner of every bed, let a firm stake be driven into the ground, to serve as a mark for the alleys. Four rows of *Asparagus* are to be planted in each bed, and ten or twelve inches distance to be allowed between plant and plant in the row; and let the outside rows of each bed be eight inches from the edge.

Strain your line along the bed eight inches from the edge; then, with a spade, cut out a small trench or drill close to to the line, about six inches deep, making that side next the line nearly upright, and when one trench is opened, plant that before you open another, placing the plants upright ten or twelve inches distance in the row.

The plants must not be placed flat in the bottom of the trench, but nearly upright against the back of it, and so that the crown of the plants may also stand upright, and two or three inches below the surface of the ground, spreading their roots somewhat regularly against the back of the trench, and at the same time drawing a little earth up against them with the hand as you place them, just to fix the plants in their due position until the row is planted; when one row is thus placed, with a rake

draw the earth into the trench, over the plants, and then proceed to open another drill or trench as before directed ; and fill and cover it in the same manner, and so on till the whole is planted ; then let the surface of the beds be raked smooth and cleared from stones.

Some make new plantations with the seeds at once ; this may be done by preparing the ground as before directed, and planting a few grains of seed in each place allotted for a plant ; they should be afterwards thinned, leaving the strongest plants to stand at the same distance every way as before.

A plantation of Asparagus, thus raised, will produce buds fit to cut the third Spring after sowing, but will be very large and fine the fourth year.

Winter Dressing of Asparagus Beds.

About the beginning of November, if the stalks of your Asparagus turn yellow, which is a sign of their having finished their growth for the season, cut them down close to the earth, carry them off the ground, and clear the beds carefully from weeds.

Asparagus beds must have an annual dressing of good manure ; let it be laid equally over the beds, two or three inches thick, after which, stretch a line, and with a spade mark out the alleys from eighteen inches to two feet wide, agreeably to their original dimensions.

Then dig the alleys one spade deep, and spread a considerable quantity of the earth evenly over the beds ; observing to make the edges of the beds straight, full, and neat, and to finish your work in a becoming manner, giving a moderate rounding to beds, especially if the ground be inclined to wet.

The alleys should be afterwards filled up with leaves or litter well trampled down, which would in some measure, prevent the frost from entering

that way to the Asparagus roots. The seedling Asparagus should also have a slight dressing; that is, to clear the bed from weeds, and then to spread an inch or two in depth of dry rotten dung over it, to defend the crown of the plants from frost.

Spring Dressing of the Beds.

This work should be done from about the latter end of March, to the middle of April. For the purpose of digging or forking these beds, you should be provided with a proper fork, having three short tines, perfectly flat, and about an inch broad; however, in lieu of such, it may be performed with a small short pronged dung fork.

In forking the beds, be careful to loosen every part to a moderate depth, but taking great care not to go too deep to wound the crowns of the roots.

The above work of forking these beds, is most necessary to be done every spring, to improve and loosen the ground, and to give free liberty for the buds to shoot up.

The beds being forked, they must afterwards be raked even; observing, if you do not rake them immediately after they are forked, to defer it no longer than the first week in April, at which time, a few Radish seeds may be scattered over them, to pull up while young.

Asparagus plants will not produce buds large enough to cut for general use, in less than three years from the time of planting. But in the fourth year, when the shoots are three or four inches high, they will bear extensive cutting. The best way of cutting, is to slip the knife down perpendicularly, close to each shoot, and cut it off slantingly, about three or four inches within the ground, taking care not to wound any young buds coming up from the same root, for there are always several shoots advancing in different stages of growth.

The above directions are intended for family gardens. Those who may wish to raise *Asparagus* in large quantities for market, may prepare the ground with a plough, and plant two rows in each bed, which may be carried to any length required. If several beds are intended they should be four or five feet apart, in order that the plough may be worked freely between them. Frequent ploughing will cause the roots to spread, so as to widen the beds; and the winter dressing may be performed in a great measure with the plough. After the *Asparagus* is cut, the ground, between the beds, may be ploughed, and planted with Cabbage, Potatoes, or Beans, &c.

BEANS. (Eng. Dwarfs.) FEVE DE MARAIS.
Vicia faba.

VARIETIES.—*Early Mazagan*—*Early Lisbon*—*Early Long Pod*—*Sword Long Pod*—*Large Windsor*—*Kentish Windsor*—*Taylor's Windsor*—*Large Toker*—*Sandwich Bean*—*Mumford*—*Green Genoa*—*Green Windsor*—*White Blossomed*—*Red Blossomed*—*Dwarf Cluster*—*Broad Spanish*—*Green Nonpareil*—*Turkey Long Pod*.

The principal cause of this garden product not succeeding well in this country, is occasioned by the Summer heat overtaking them before they are podded, causing the blossom to drop off prematurely; consequently, the crops are poor and scanty—to obviate this difficulty, they should be planted as early in the year as possible. They are generally planted in England, from October to April, for early crops, and from that time to July, for late crops. It sometimes happens that their plantings are in-

jured by the extremity of their Winters, but they never miss having an average crop.

In order to insure success here, I would recommend those who are desirous of obtaining a tolerable supply of these vegetables, to plant them early, as it will be recollected that they will be deficient in quality as well as in quantity, on the approach of the warm weather. If the ground should be frozen the last week in January, or early in February, they may be sown in boxes of earth placed in a light cellar, or in earth on the floor, and afterwards transplanted. If this is not done, let them be planted as soon afterwards as possible, in drills two or three inches deep, and if it should happen that they cannot be planted by the middle of February in the place where they are to stand, let some of the early kinds be sown pretty thick in a bed of light earth; and when come up to an inch or two in height, transplant them in rows from thirty inches to three feet asunder, according to the size and kind, and the Beans two or three inches distant in the rows. The method is this: dig a bed about three or four feet broad, of good earth, in a warm situation; this being done, draw broad drills with a small spade, or common hoe, flatways across the bed, and scatter the Beans pretty thick in the drill, and draw the earth equally over them; and thus, if severe frosts should prevail before they come up, or in their infant state while remaining altogether in the bed, they can be readily protected from frost, with frames, mats, or litter, until fit to transplant. As soon afterwards as the weather is favourable, let them be taken up carefully out of the seed bed, with their full spread roots, and as much earth as will hang about them, and be carefully transplanted as before directed, observing to close the earth lightly about every plant. They will soon take root and grow

freely. This method is considered by some as preferable to the general method of planting them in the place where they are to stand, and it is said, that by transplanting they generally bear several days sooner. It may be necessary to observe that a strong clayey soil is the most suitable, but they often do well in moderately light low ground, provided it is well trodden or rolled, after the beans are planted. The early kinds may succeed if planted in March and April, and it is only from those early sown that any tolerable produce may be expected in the United States, especially in the middle and southern parts.

The Mazagan and Lisbon are the earliest, the White Blossom Bean is very delicious, and boils much greener than any other kind ; but the Genoa bears the heat of our climates better than either of the others, and therefore is the most suitable for late crops. The Long Podded Bean is very good, and bears well; but the Windsor, Sandwich, Toker, and Broad Spanish kinds, are more esteemed than any other. The Dwarf Cluster Bean is a great bearer, never grows above a foot or fourteen inches high, and may be planted in rows, either in beds or borders, the rows to be about two feet asunder, and as this kind branches out considerably from the root, the Beans must be planted in single rows, and five or six inches distant from one another.

If all the different varieties are planted at one time, they will come into bearing in a regular succession, according to their different degrees of earliness—and it will be necessary to repeat the plantings every two weeks from January to the latter end of March.

As soon as the Beans are three or four inches high, they will need a careful hoeing, and if some earth be drawn up to their stems, three or four

times in the course of their growth, it will greatly refresh and strengthen them.

When they are arrived at full bloom, and the lower pods beginning to set, the tops may be broken off. If this be done at the proper time, it will greatly promote the swelling of the pods, as well as their early maturity ; for having no advancing tops to nourish, the whole effort of the root will go to the support of the fruit.

Broad Beans are particularly subject to a green bug ; tobacco water, or salt water will sometimes destroy them ; but the most certain way is to watch their first appearance, and to pick off that part, on which they first settle, and burn it, or if such plants be cut down close to the ground they will produce fresh shoots which may bear a good crop.

BEANS. (Kidney Dwarf.) HARICOT. *Phaseolus vulgaris*, etc.

VARIETIES.—*Early Yellow Cranberry—Early Mohawk—Early Dwarf Cluster—Early Yellow Six Weeks—Early Dun Colored or Quaker—Early China Dwarf—Early Black Dwarf—Large White Kidney Dwarf—White Cranberry Dwarf—Red Cranberry Dwarf—Warrington or Marrow—Refugee or Thousand to One—Rob Roy—White Cutlass Bean of Carolina—Bonavista.*

These kinds of Beans being all excellent, I shall leave my readers to choose for themselves. The early kinds will come to perfection in from six to eight weeks after planting. Some of the other kinds will keep longer in bearing, and are esteemed by some on that account. These, with some of the early kinds, may be planted in the months of May and June. If a regular succession of young Beans

be wanted throughout the summer, some of the early kinds should be planted every two weeks from the last week in April until the beginning of August. These Beans require light rich soil, and may be planted in hills (three or four in a hill) or drills about two inches deep, and the Beans two or three inches from each other; the drills may be from two to three feet apart. (The Refugees are best planted in hills). As the Beans progress in growth, let them be carefully hoed, drawing the earth up to their stems at the same time, and they will be soon fit for the table

The Bonavista is a new Dwarf Bean, by many considered equal to Lima Beans. They grow nearly two feet high

BEANS—(Pole or Running.) HARICOTS A RAMES.
Phaseolus Limensis.

VARIETIES.—*Large White Lima—Sieva or Carolina.*

Phaseolus Multiflorus.

VARIETIES.—*Scarlet Runners—White Dutch Runners—Dutch Case Knife or Princess—Red Cranberry—White Cranberry.*

The Beans of the latter species may be planted the latter end of April, and in May and June, either in hills three feet distant from each other, or in drills about two inches deep. The poles should be eight or ten feet long, and may be fixed in the ground before the Beans are planted.

The Carolina and Lima Beans should not be planted in the open ground until the second week in May, unless the season be very favourable, and

the ground warm. As these Beans are apt to get injured by cold and damp weather, let six or eight Beans be planted half an inch deep round each pole, and afterwards thinned, leaving three or four good plants in a hill, which hills should be from four to five feet distance from each other every way.

The soil for running Beans should be the same as for Dwarf kinds, except the Lima, which requires richer ground than any of the other sorts.

If any of these Beans are wanted earlier than the ordinary seasons, they may be planted in flower pots in April, and placed in a green house or garden frame, and being transplanted in May with the balls of earth entire, will come into bearing 10 or 14 days earlier than those which are planted in the natural ground.

BEET. BETTERAVE. *Beta vulgaris, etc.*

VARIETIES.—*Early Blood Turnip rooted—Early White Scarcity—Early Dwarf Blood—Long Blood Red—Yellow Turnip rooted—Mangel Wurzel—Sir John Sinclair's—French Sugar or Amber.*

A small bed of the earliest and most esteemed kinds of Beets may be planted in good rich early ground towards the end of March, or in the first week of April, which being well attended to, will produce good roots in June

Draw drills a foot apart, and from one to two inches deep; drop the seeds along the drills two or three inches from each other, and cover them with the earth. When the plants are up strong, thin them to the distance of six or eight inches from each other in the rows. The ground should be after-

wards hoed deep round the plants, and kept free from weeds.

Beets may be planted for general crops from the first week in April, until the beginning of June, in rich mellow ground, and in case of failing crops, they may produce good roots in the Fall, if planted the last week in June.

It is always best to thin them out early. If the tops are used as a vegetable, they should not be left too long for this purpose, or they will greatly injure the roots of those that are to stand. Beds that are to stand through the summer, should be kept clean by repeated hoeings; and the roots intended for winter use should be taken up in October, or early in November.

BORECOLE AND BRUSSELS SPROUTS.

CHOU FRISE VERT. CHOU DE BRUXELLES A JETS. *Brassica oleracea, var sabellica, acephala, bullata, etc.*

VARIETIES.—*Green Curled or Fringed Cabbage—Purple Curled—Thick Leaved Curled—Finely Fringed—Siberian or Scotch Kale—Brussels Sprouts.*

For the garden, these may be treated in every respect as Winter Cabbages:—the seeds may be sown about the middle of May, and the plants set out in the month of July, in good rich ground. They are never so delicious as when rendered tender by smart frosts; they are very valuable plants to cultivate, particularly in the more Southerly States, as they will there be in the greatest perfection during the winter months; they will also, if planted in a gravelly soil, and in a sheltered warm situation, bear the winters of the Middle States; and may be kept in great perfection in the Eastern States, if taken up before the winter frost sets in with much

severity, and placed in trenches up to their leaves, and covered with straw or other light covering: the heads may be cut off as they are required for use; and in the Spring, the stems being raised up, will produce an abundance of delicious Greens.

This vegetable is frequently raised in England for cattle, for which, on account of its luxuriant growth, it is very profitable; the Brussels Sprouts grow there from three to five feet high, and produce an abundance of Greens in the winter.

There are several sub-varieties of this genus of plants, besides those specified, most of which have large open heads with curled wrinkled leaves; the thousand headed cabbage is of this kind, and is grown chiefly for cattle.

BROCCOLI. **BROCOLI.** *Brassica oleracea Italica, etc.*

VARIETIES.—*Early Dwarf Purple—Early Green—Large Late Purple—Dwarf Late Purple—Branching Purple—Late Green—Brown—White or Cauliflower Broccoli—Large Purple Cape—Grange's White Cape and Sulphur Cape.*

The several varieties of Broccoli and Cauliflower may be justly ranked amongst the greatest luxuries of the garden. They need only be known in order to be esteemed. The Broccoli produces heads, consisting of a lump of rich seedy pulp, like the Cauliflower, only that some are of a green colour, some purple, some brown, &c., and the white kinds so exactly resemble the true Cauliflower as to be scarcely distinguished either in colour or taste.

Broccoli is quite plentiful throughout England the greater part of the year, and it is raised with as little trouble as Cabbages are here. The mode of

raising the Purple Cape Broccoli is now generally understood in this part of America; but the cultivation of the other kinds, has been nearly abandoned on account of the ill success attending former attempts to bring them to perfection. In such of the Southern States, where the winters are not more severe than in England, they will stand in the open ground, and continue to produce their fine heads from November to April. In the Middle, and especially in the Eastern States, if the seeds of the late kinds be sown in April, and the earlier kinds in May, in the open ground, and treated in the same manner as Cauliflower plants, it would be the most certain method of obtaining large and early flowers; but as only a part of these crops can be expected to come to perfection before the approach of winter, the remainder will have to be taken up, laid in by the roots, and covered with earth up to the lower leaves.

Those who are desirous of obtaining Broccoli and Cauliflower in any quantity, so as to have all the different varieties in succession, should have places erected similar to some of our greenhouses, the back and roof may be made of refuse lumber, which being afterwards covered with fresh stable dung will keep out the frost. The place allotted for Cape Broccoli and Cauliflower, should have a glazed roof to face the South—the sashes must be made to take off in mild weather, but they should be always kept shut in severe cold weather, and covered with mats, or boards, litter, &c. so effectually as to keep out the frost.

The hardy kinds of Broccoli may be preserved without glass, by having shutters provided to slide over the front in extreme cold weather, which may be covered over with fresh stable dung or other litter. If these plants get frozen, it will be necessary

to keep the full power of the sun from coming on them until they be thawed, this may be done by shaking a little straw over the bed as they lay. It may perhaps be not generally understood that the sudden transition from cold to heat, is more destructive to vegetables than the cold itself. If plants of any kind get frozen, and cannot be screened from the sudden rays of the sun, they should be well watered as the air gets warm, and before they begin to thaw; this will draw out the frost and may be the means of saving the plants.

The proper time for sowing the seeds of the Purple Cape Broccoli, is from the tenth to the twentieth of May, those who intend to provide a place for the winter keeping of the other kinds, may sow seeds of the most esteemed varieties at the same time, or in two or three separate sowings, a week apart.

When the plants are of sufficient size, they should be transplanted into extraordinary rich ground, which should be brought previously into good condition. This being done, plant them in rows two feet and a half apart, and two feet distance in the rows. As soon as they have taken root, give the ground a deep hoeing, and repeat this two or three times in the course of their growth, drawing some earth around their stems at the same time.

Such plants as are not likely to produce heads in the open ground, should, be taken up early in October, and laid in carefully close, together with the roots and stems covered with earth as far up as the lower leaves. Those who have not a place provided, may keep a few in a light cellar, but every gardener and private gentleman should have suitable places erected for a vegetable that yields such a delicious repast, at a time when other luxuries of the garden are comparatively out of our reach.

CAULIFLOWER. CHOUFLEUR. *Brassica oleracea botrytis*.

VARIETIES.—*Early*.—*Late*.

This is a first rate vegetable ; to obtain which, great pains must be taken in every stage of its growth, the extremes of heat and cold being very much against it. The seeds of the early kinds should be sown between the 16th and 24th of September, in a bed of clean rich earth. In about four or five weeks afterwards, the plants should be pricked out into another bed at the distance of four inches from each other every way ; this bed should be encompassed with garden frames, covered with glazed sashes, and boards or shutters ; the plants should be watered and shaded a few days till they have taken root, they will afterwards require light and air every mild day throughout the winter, but the outsides of the frames must be so lined and secured, and the tops of the beds so covered as to keep out all frost.

They should be well attended to until the time of transplanting in the spring, and those who have not hand or bell glasses, so as to enable them to set some out by the latter end of March, should have a frame ready about the last week in February, in order that they may be transplanted to the distance of eight or nine inches apart ; this would prevent them from buttoning or growing up weak ; if this be not done, some of the strongest plants should be taken out of the bed and planted in flower pots, which may be afterwards placed in a frame or greenhouse until the weather be warm and settled, which may be expected soon after the middle of April. They should be then turned out with the balls of earth entire, and planted in a bed of the richest earth in the garden, at the distance of two

feet and a half from each other every way ; the residue may be taken up from the frame the last week in April, or earlier if the season proves mild, by means of a garden trowel and planted as above. The plants should be afterwards well attended to by hoeing the ground deep around them, and bringing the earth gradually up to the stems, so as to push them forward before the approach of warm weather.

The Fall plants are generally allowed to succeed best, but good Cauliflowers are sometimes produced from seed sown in a hot bed towards the end of January, or early in February. Great pains must be taken to have the bed in good condition to receive the seed ; when the plants are up, they must have air every mild day, and as they progress in growth, they should have as much air as possible, consistent with their preservation, but the beds must be kept covered up every night as long as there is any danger of frost. When the plants are three or four inches high, they must be pricked out three or four inches apart into another bed, and by the latter end of April they may be transplanted into the ground, and treated in every respect the same as the other. These plants if well managed, will succeed very well, and those that do not flower by June, may make good heads in Fall.

In the early part of May, Cauliflower seeds may be sown in the open ground, the plants should be pricked out in June, and transplanted into good ground early in July, to flower in the Fall : those that are not likely to flower by the last of October, should be taken up and provided for in the manner recommended for the Cape Broccoli.

It will be beneficial in the raising of Cauliflowers to defend them from the north west winds, by hedges made of reeds, or pales thatched with straw.

CABBAGE. CHOU. *Brassica oleracea*, etc.

VARIETIES—*Early York—Early Dutch—Knight's Early Dwarf—Early Salisbury Dwarf—Early Emperor—Early Penton—Early Wellington—Early Sugar-loaf—Early London Battersea—Early Heart-shaped—Early Imperial—Large Late Drum-head—Large Sugar-loaf—Large Late Battersea—Large Bergen or Great American—Green Glazed—Large Scotch, for Cattle—Red Dutch, for Pickling—Green Globe Savoy—Yellow Savoy—Turnip Rooted.*

The early heads of spring Cabbage may be raised in various ways. Some sow the seeds between the 10th and 24th of September, pricked out and managed the same as Cauliflower plants, only that they are more hardy, and may be kept through the winter without glazed sashes. Some prefer sowing the seeds in a cold-bed, covered by a garden frame, and with sashes. If this frame be placed on a warm border, and kept free from frost, and the seed of the early kinds sown the latter end of January or early in February, these plants will be better than those raised in the Fall; as they will not be so liable to run to seed, and they will be more hardy than those raised on hot beds in the spring.

The gardeners about New-York sow their seed on hot-beds covered with glass frames, the last week in February, or early in March: the plants will be fit to transplant about the middle of April, and should be set out in good ground from sixteen inches to two feet apart, according to the size and kind. These, by being hoed often, will produce good Cabbages in June. If seeds of the large early kinds be sown in a warm border early in April, they will produce plants fit to transplant in May, and will make good Cabbages for Summer use.

The seed of Red Cabbage may be sown early in May, and those of Savoy and late Cabbage in general, may be sown at two or three different times, between the 10th and 25th of May, in fresh rich ground free from weeds; the young plants will require to be watched at this season of the year, and if they are attacked by insects, recourse must be had to the ingredients recommended in the general directions; these if used every evening until the plants get strong, will bring them forward for transplanting in the second or third week in July.

The Bergen and other large kinds should be planted in rows at least thirty inches asunder, and the plants about two feet apart in the rows; the Savoy and smaller sorts may be placed from four to six inches nearer every way. Cabbage succeeds best in a fresh rich soil, and the ground should be deeply hoed at least three times during their growth.

The *Brassica rapa*, or Turnip Cabbage, produces its bulb or protuberance, on the stems above ground, immediately under the leaves. It is eatable when young, or about the size of a garden turnip.

The seeds may be sown in April or May, and the plants afterwards treated the same as Cabbage, only that in earthing up the plants you must be careful not to cover the globular part.

They are much more hardy than Turnips, and in England the bulbs often grow to upwards of twenty inches in circumference, and weigh from ten to twelve pounds. They are cultivated for the feeding of cows and sheep, as well as for table use; in either case they treat them as they do Cabbages, or sow them like Turnips, and afterwards hoe them out to proper distances.

The *Brassica Napus*, or Turnip rooted Cabbage, has an oblong thick root in the form of a winter

radish ; it is extremely hardy, and will survive very hard frosts ; the seeds should be sown in strong rich ground, and treated in every respect as Turnips, observing to thin the plants with the hoe to the distance of about sixteen inches apart. Their roots will be much larger and better when treated in this way, than if transplanted.

The *B. napus*, variety *esculenta* is sometimes cultivated as a salad herb. It is in great esteem by the French, as a culinary vegetable, and is called the *Navet* or French turnip. In France, as well as in Germany, few great dinners are served up without it in one shape or other.

COLEWORT, OR COLLARDS. CHOU VERT.
Brassica oleracea.

This is a species of Cabbage which is eaten when young ; it so nearly resembles the early kinds of Cabbage, that it is very seldom cultivated. The English prefer sowing the seeds of early heading kinds of Cabbages, as a substitute, which being done at different seasons, enables them to procure a supply of fresh Greens from their gardens every day in the year. This is not attainable here, on account of the extremes of heat and cold ; but Collards would prove very valuable and acceptable in the event of an unfavourable season for fall Cabbage.

If the seeds of Early York, Early Dutch, Dwarf, or Sugar-loaf Cabbage, be sown in June, July and August, and transplanted as they become fit, into good ground from fifteen to eighteen inches apart, the first planting would make good heads for fall use ; and the plants of late sowings, if transplanted in September and October in a warm border, would produce tender sweet eating Greens for use in the early part of the Winter ; the latter plantings may be placed 10 or 12 inches plant from plant. These

could be easily sheltered on the approach of severe weather, without being taken up.

CARDOONS. CARDON. *Cynara cardunculus*.

The Cardoon Artichoke is much cultivated in Europe for Culinary purposes, such as for salads, soups, stewings, &c.

The stems of the leaves being thick and crisp, are the eatable parts after being blanched. They are in perfection in Autumn and Winter.

The seeds may be sown in a bed of rich earth in the month of April; when the plants are up strong, they should be thinned to four or five inches distance, to prevent their becoming weak. They may be transplanted in June, at the distance of four feet from one another every way; observe, before planting, to dress their tops and roots the same as Celery. As they advance in growth they are to be earthed up for blanching, keeping the leaves close together; this may be done with bass or matting, as practiced with Endive; they are afterwards to be earthed up gradually from time to time, until whitened to a sufficient height. As winter approaches. Cardoons must be taken up and laid away like Celery, or they may be preserved with sand in a cellar.

CARROT. CAROTTE. *Daucus carota*

VARIETIES.—*Early Horn—Long Orange—Blood Red—Lemon—Altringham.*

Of these several varieties of Carrots, the Early Horn is the earliest, but the Long Orange and Altringham are in greater esteem, on account of their

bright orange colour, as well as for their great size and length. They grow to great perfection in a rich loamy soil, and may be raised in drills drawn about one inch deep, and twelve inches asunder. A small bed may be planted the latter end of March, for an early crop, and from that time to the end of June, for successive crops.

The most suitable ground for the main crop of Carrots or Beets, is that which may have been well manured in the Fall for Spinach, and would require no fresh manure. If the seed be sown in May, and the plants thinned out to the distance of five or six inches from each other, while young, and kept hoed, they would yield an abundance of fine roots for Winter and Spring use, by being taken up in the Fall, and preserved either in sand in a cellar, or in graves covered up in the garden.

Carrots are used in England as fodder for cows, sheep, oxen and horses. The seed is sown broad cast and harrowed in; after they have been once hoed, they are harrowed again; this loosens the soil, without hurting the crop, unless the ground happens to be rough, in which case they go over the land and clear the plants from heaps of mould that may gather about them. They frequently yield upwards of 300 bushels to an acre.

CELERY. C LERI. *Apium graveolens.*

VARIETIES—*White Solid*—*ose Coloured Solid*—*North's Giant Red*—*Italian*—*Celeriac, or Turnip Rooted.*

Those who may want Celery for Summer use, should sow some seed of the *White Solid* in a slight hot bed early in March, but as plants raised in this

way are apt to run to seed, it is much better to wait a fortnight, and sow some in a warm border. The seed for a general crop should be sown the last week in March, or early in April, in low but rich mellow ground ; if it be sown in drills half an inch deep, and raked in even, it will produce strong plants by hoeing frequently between the rows.

The early sown plants should be pricked out into a nursery bed of rich earth as soon as they are two or three inches long, there to remain about a month, after which they will be fit to transplant into the trenches.

Choose for this purpose a piece of rich ground, in an open exposure ; mark out the trenches by line, 10 or 12 inches wide, and allow the space of three feet between them, which will be sufficient for the early plantations. Dig each trench a moderate spade deep, laying the dug out earth equally on each side, between the trenches ; lay three inches deep of very rotten dung in the bottom of each trench, then pare the sides and dig the dung and parings with an inch or two of the loose mould at the bottom, incorporating all well together, and put in the plants. Previous to planting, trim the tops of the plants, by cutting off the long straggling leaves, and also the ends of their roots. Let them be planted with a dibble, in single rows, along the middle of each trench, five or six inches between plant and plant, as soon as they are planted give them a plentiful watering, and let them be shaded until they strike root and begin to grow.

The main crops may be planted in the same way, but in trenches four feet distant from each other, and an inch or two further from plant to plant ; or in beds made in the following manner, which for the ease of preserving the plants in winter, will be

found extremely convenient, besides a greater quantity can be raised on a given piece of ground.

Lay out the ground into beds of four feet wide, with alleys between, of three feet; dig the beds a spade deep, throwing the earth on the alleys; when done, lay four or five inches of good well rotted dung all over the bottom of the beds, dig and incorporate it with the loose earth, and cover the whole with an inch or two of earth from the alleys; plant four rows in each bed at equal distances, and from six to eight inches apart in the rows; after which, give them a plentiful watering and shade them.

The plants must be hoed occasionally until grown of sufficient size for earthing, which is done with the assistance of boards, by laying them along the rows, to support the leaves while you are putting in the earth from the alleys, and removing them as you progress in the business.

The earthing should never be done when the plants are wet, as this apt to make Celery rusty, but should be performed gradually in fine weather as the plants progress in growth, repeating the earthing every two weeks, at which time care should be taken to gather up all the leaves neatly, and not to bury the hearts of the plants. When they are grown two feet high, and well blanched, they are fit for the table. As Celery will grow three or four feet high in one season, it will be necessary to delay the planting of that which is intended for winter use until the latter end of July, but the trenches should always be got ready soon enough, to avoid a serious drought, which often delays the plantings till too late in the season. The blanching of Celery for winter use may be delayed until October.

The Celeriac, or Turnip Rooted, may be planted either on level ground or in shallow drills, the roots

of it swell like a Turnip and may be preserved in sand through the Winter. The French and Germans cut it in slices and soak it a few hours in vinegar; by such simple preparation, it becomes as mellow as a Pine Apple, and affords a delicious and very nourishing repast.

In raising Celery on a large scale, the trenches may be worked out with a plough, and finished afterwards with a spade or hoe. The ground may be also ploughed between each row of Celery previous to earthing it up; this will save much labour.

CHERVIL, OR CICELY THE SWEET. CER-
FEUIL. *Scandix odorata cerefolium.*

Chervil is a small salad herb of aromatic property; its leaves are used as salads, and for soup, &c. The seed may be sown early in the Spring, in drills half an inch deep and ten or twelve inches apart: and managed the same as Parsley.

CHIVES, OR CIVES. CIVETTE. *Alium scorodoprasum.*

This is a small species of Onion, growing in large tufts; they are propagated by offsets from the root, and may be planted either in the Spring or Fall, in rows ten or twelve inches apart, and the bulbs three or four inches apart in the rows; they will soon take root, and increase very fast into large bunches of bulbs.

CORN SALAD, OR FETTICUS. MACHE OU DOUCETTE. *Valeriana locusta, variety olitoria.*

The V. L. variety O. grows commonly in the cornfields in England, hence it is called Corn Salad, and from its being sufficiently hardy to stand the Winter, it has acquired the appellation of Lamb's Lettuce, from its affording them an early pasturage. It is cultivated for salads for winter and early spring use. The seed may be sown in rich clean ground, the latter end of August or early in September, and the plants must be covered with straw at the approach of severe weather.

CRESS. CRESSON. *Lepidium sativum.*

VARIETIES.—*Curled, or Peppergrass—Broad Leaved Garden.*

Cress is also a small salad herb, and is generally used with lettuce, white mustard or rape. It should be sown in little drills very thick, (as should the white mustard and rape,) and cut before it comes into rough leaf. A small quantity in the salad season should be sown every week in clean rich ground.

WATER CRESS. CRESSON DE FONTAINE. *Nasturtium officinale.*

The Water Cress is a creeping amphibious perennial, and is grown very extensively about London for the markets. Loudon says in his Encyclopedia of Gardening, that, "The most suitable description of water is a clear stream, not more than an

inch and a half deep, running over sand or gravel; the least favorable, deep still water, or a muddy bottom. It is highly advantageous to make the plantations in newly risen spring water, as the plants not only thrive better in it, but in consequence of its being rarely frozen, they generally continue in vegetation, and in a good state for gathering through the whole winter season. The plants are disposed in rows parallel with the course of the stream, about eighteen inches apart. When these plants begin to grow in water one inch and a half deep, they soon check the current so as to raise the water to the height of three inches above the plants, which is considered the most favorable circumstance in which they can be placed. It is absolutely necessary to have a constant current, as where there is any obstruction to the stream or place of water, the plants cease to thrive. After they have been cut about three times, they begin to stock, and then the oftener they are cut, the better."

CUCUMBER. CONCOMBRE. *Cucumis sativus, etc.*

VARIETIES.—*Early frame—Long Prickly—Short Prickly—Long Green Southgate—Long Green Turkey—Long White Turkey—Green Cluster—White Spined—Small Gherkin or West India.*

The most suitable kinds of Cucumbers for early planting are the Early Frame, Green Cluster, and Long Prickly. These may be planted in the open ground the first week in May, in hills four feet apart. Previous to planting, the ground should be prepared by incorporating a shovel full of rotten dung with the earth in each hill, after which four or five seeds may be planted half an inch deep. Cucumbers

are liable to be attacked by a yellow fly, which sometimes devours all the young plants; these and other insects may be killed by sowing tobacco dust, soot, or powdered charcoal round about the vines when they first come up. After this be done, the plants may be thinned to two or three in a hill, and the ground carefully hoed, drawing a little earth round them at the same time. Before the vines begin to run, they should be stopped; this is done by pruning off the top of the first runner bud, which will promote a stocky growth, and cause them to put forth lateral shoots at the first and second joints, to form fruitful runners; and from these, others of the same nature will be produced. Cucumber vines should be kept free from weeds, and if the weather proves dry, a gentle watering now and then given in the evening will be of considerable service.

Picklers may be raised by planting the seeds at any time in July. When the vines begin to bear, they should be looked over, and the fruit gathered as fast as it becomes fit, as the plant will cease to bear much if the fruit be permitted to get yellow.

EGG-PLANT. MÉLONGENE OU AUBERGINE.
Solanum melongena.

VARIETIES.—*Purple, (for culinary purposes)—White, (ornamental.)*

The seed of the Purple Egg-Plant must be sown in a hot-bed about the first of March, and the sashes kept down close until the plants come up, after which a little air may be given in the heat of the day. Towards the middle of May, the plants should be set out from twenty-four to thirty inches apart, in a rich warm piece of ground, and if kept clean, and a little earth drawn up to their stems

when about a foot high, they will produce plenty of fruit.

The plants of the white kind may be raised in the same manner, and transplanted into pots in May, or if some of the seed be sown in a warm place the first week in May, they will come to perfection in course of the summer.

ENDIVE, OR SUCCORY. CHICOREÉ DES JARDINS. *Cichorium endiva*.

VARIETIES.—*Green Curled*—*White Curled*—*Broad Leaved Batavian*.

The proper kind of Endive for early sowing, is the Green curled. A small quantity of this may be sown at different times in April and May, for those who would have it early. These crops will be very apt to run to seed; for this reason, it will be best to delay the sowing of seeds for general crops until June and July. If a small quantity of each kind of seed be sown two or three times in these months, they will produce a plentiful supply for use in the fall and early part of the winter. When the plants are three or four inches high, they should be transplanted into good ground, to the distance of a foot from each other, and immediately watered; or if they are set out in cloudy or wet weather, it will save this trouble. The plants will require to be hoed and attended to in the same manner as Lettuce, until grown to a moderate size, when they must be blanched. Select the large and full-hearted plants, and with bass or other strings, tie them a little above the middle, not too tight, previously gathering up the leaves regularly in the hand. This must be done when the leaves are very dry, otherwise the plants will rot.

GARDEN BURNET. PIMPRENELLE. *Poterium sanguisorba*.

The common Garden Burnet is a native of England, and grows wild in dry calcareous soils. It has fibrous roots, and retains its leaves throughout the year, but the stalks are annual. It has long been cultivated as a choice salad herb. The leaves being of a warm nature, are also used in cool tankards, and for imparting an agreeable flavour to wine and cider. The seed may be sown in drills about an inch deep, and twelve inches apart, in March or April; at which time, the roots of old plants may be parted off, and the slips planted out separately.

INDIAN CORN. MAÏS. *Zea mayz*.

VARIETIES.—*Early Golden Sioux*—*Early Canadian*—*Early Jefferson*—*Sweet or Sugar*—*Large Southern Horsetooth*—*Large Flour White*—*Nonpareil or Pearl (Curious)*—*Mottled*—*Curious White*.

The different kinds of Early Corn intended for boiling when young, or others as curiosities, may be planted in the garden the last week in April, in hills four feet apart, or in drills. If some of each be planted in separate beds at the same time, they will come in for the table one after the other in regular succession. After this, if any particular kind be preferred, it may be planted at different plantings in May and June. If the ground be poor, mix a shovel full of old manure with the earth in each hill before the seeds are planted, and after the plants are up strong, scatter a tea-cup full of wood ashes around each hill. This, with attentive hoeing and hilling, will cause it to produce ears early. Deep

digging between the hills is very beneficial when the corn is about eighteen inches high.

LEEK. POIRREAU. *Allium porrum.*

VARIETIES.—*Large Scotch or Welch Flag*—*London.*

This is a wholesome and useful herb, and is so hardy as to endure the extremes of heat and cold without injury. The seed may be sown in March or early in April, on a bed of rich earth, either broadcast, or in drills an inch deep. If the ground be kept loose and clean, the plants will be large enough to transplant in June or early in July, and should be set out in good ground, in rows twelve inches asunder, and the plants five or six inches apart in the rows. They will grow well in a warm border, which at this season is useless for many kinds of vegetables. After the plants have taken root, they should be frequently hoed and kept free from weeds.

Those who wish to have leeks blanched, may plant them in trenches three or four inches deep, and as the plants progress in growth the earth should be drawn into the trenches.

LETTUCE. LAITUE *Lactuca sativa crispa.*

VARIETIES—*Early Curled Silesia*—*Large Green Head, or Cabbage*—*Imperial*—*Hardy Green*—*Brown Dutch*—*Grand Admiral*—*Madeira, or Passion*—*Tennisball, or Rose*—*Drumhead*—*Magnum Bonum Coss*—*Ice Coss*—*White Coss or Loaf*—*Green Coss.*

The seeds of the Hardy kinds of Lettuce may be sown from the first to the middle of September in

rich ground free from weeds ; it answers very well sown with Spinach, and should be covered over with straw at the approach of severe weather. These plants, if transplanted into warm borders, or in the open ground as early in March as the weather permits, will produce fine heads early in May. The best of the tender kinds may be raised early, by sowing the seeds in hot beds the first week in March, which being transplanted into good ground, will produce fine heads before the approach of warm weather. The other kinds may be sown in warm borders in March or April and transplanted in May. The Coss Lettuce requires to be blanched ; this is done by gathering up the leaves of the plants, and tying bass round them when grown to perfection.

All kinds of Lettuce intended for heading, should be planted into good ground twelve inches distant from each other every way ; the plants should be carefully hoed every other week during their growth ; the first hoeing should be done in about two weeks after they are transplanted.

If head Lettuce be required at other seasons than the spring, it may be obtained in the fall by sowing the seed in August, or in the winter by means of a graden frame and glazed sashes.

MELON. MELON. *Cucumis melo.*

VARIETIES---*Green Citron---Murray's Pine Apple---Persian---Nutmeg---Large Cantaloupe---Pomegranate, or Musk Scented---Star---(a few extra kinds from Europe in 25 cent papers.)*

The Melon is an exotic plant, growing wild in Asia. It is cultivated in all the warm countries of

Europe, and also in Africa and America, where its salubrious and cooling fruit is greatly esteemed.

For the varieties of the Musk or Cantaleupe Melons, prepare a piece of rich ground the first week in May, manure it and give it a good digging; then mark it out into squares of six feet every way; at the angle of every square dig a hole twelve inches deep and eighteen over, into which put seven or eight inches deep of old rotten dung, throw thereon about four inches of earth, and mix the dung and earth well with the spade, after which draw the remainder of the earth over the mixture, so as to form a round hill about a foot broad at top. When your hills are all prepared as above, plant in each towards the centre, eight or nine grains of good melon seed, distant two inches from one another, and cover them about half an inch deep. When the plants are up and in a state of forwardness, producing their rough leaves, they must be thinned to two or three in each hill; draw earth from time to time round the hills, and as high about the roots of the plants as the seed leaves. As soon as the plants spread into branches they should be stopped, by pinching off the top of the first runner bud as directed for Cucumbers; after which keep the ground perfectly free from weeds by frequent hoeings.

Those who wish to raise Melons in perfection, must be careful to plant them remote from an inferior sort, also from Cucumbers, Squashes, and Gourds; as degeneracy will infallibly be the consequence of inattention to these particulars. To prevent the ravages of flies &c., see Cucumber.

WATER MELON. MELON D'EAU. *Cucurbita citrullus.*

VARIETIES---*Carolina Water*---*Long Island Water*
---*Apple Seeded Water.*

The Water Melon, though by some considered a species of the former, is a distinct genus of exotic plants. They afford a very refreshing article of diet in our warm summers. Dr. Pallas, in the account of his journey to the southern provinces in Russia in 1793 and 94, speaking of a colony of Moravians at Sarepta, or Sapa on the river Volga, says, "the ingenious inhabitants of this town brew a kind of beer from their very abundant and cheap Water Melons, with the addition of hops; they also prepare a conserve or marmalade from this fruit, which is a good substitute for syrup or treacle."

In order to have Water Melons in good perfection, you must fix upon a piece of very rich light soil; prepare, sow, and manage it in every respect as is directed for the others, only let the hills be nine or ten feet distant every way.

MUSTARD. MOUTARDE. *Sinapis, etc.*

The *Alba*, or White Mustard, grows spontaneously in the fields in England, it is also cultivated as a small salad, as well as for seed. The seed yields from every 100 pounds, from 33 to 36 pounds of sweet mild oil.

The *Nigra*, or Common Mustard, is also a native of England. The condiment, called mustard, and in daily use at our tables, is prepared from the seeds of this species.

The *Erysimum* is a genus of plants comprising ten species, four of which are natives of Britain.

1. The *Officinale*. This species possesses a warm and acrid flavour; and when cultivated is used as an early pot herb. Its seeds taken internally promote expectoration, the discharge of urine, and other fluid secretions. The juice has been employed with unparalleled success in ulcers of the throat, &c.

2. The *Barbarea*, or Winter Cress, is used as a salad in spring and autumn: some boil them as Kale.

3. The *Alliari* is also cultivated as a salad. The Prussians eat the leaves in the spring with salted meat. In Wales it is frequently used as a frying herb, and in England the leaves are used with Lettuce, &c.

4. The *Cheiranthoides* is eaten by horses, cows, goats, sheep and swine; and is used by the country people for destroying worms.

The seeds of all the kinds of Mustard may be sown in clean rich ground in April and May; and for a fall salad in September, in shallow drills.

NASTURTIIUM. CAPUCINE. *Sylvestre*.

There are of the Nasturtium a major and a minor kind; the former being of a large running growth is the most productive. The seeds of the running kind should be sown in April or early in May, in drills about an inch deep, near fences, or pales; or trellises should be fixed on which they can climb and have support; for they will always be more productive in this way than when suffered to trail on the ground. The dwarf kind may be planted in hills, two or three seeds in a hill.

OKRA. GOMBO. *Hibiscus esculentus*.

The green capsules of this plant are used in soups, and its ripe seeds, if burnt and ground like coffee, can scarcely be distinguished therefrom.

The seed should be planted in good rich ground, the first or second week in May. Draw drills about two inches deep, and four feet assunder, into which drop the seeds at the distance of six or eight inches from one another, or rather drop two or three in each place, lest the one should not grow, and cover them near an inch in depth ; as they advance in growth thin them out, earth them up two or three times, and they will produce abundantly.

ONION. OIGNON. *Allium Cepa*.

VARIETIES.—*White Portugal*—*Yellow Dutch*—*White Spanish*—*Silver Skinned*—*Strasburgh*—*Large Deptford Red*.

Of the several varieties of Onions, the Strasburgh and Large Deptford Red are the best for a general crop. The bulbs are handsome, of firm growth, and keep well through the winter. The White Portugal and Silver Skinned Onions are of a mild taste, and generally turn out very profitable crops.

Previous to sowing onion seed for a general crop, the ground should be well prepared by digging in some of the oldest and strongest manure that can be got. The earlier this be done in the spring the better ; and the planting should not be delayed longer than the middle of April. The seed may be sown broad cast, or in drills one inch deep and twelve inches apart. When the plants are up strong they should be hoed. Those beds that are to stand

for a full crop, should be thinned out while young, to the distance of two or three inches from each other; if a few should be required for use after this, those can be taken which incline more to tops than roots, and if the beds be frequently looked over and the small and stalky plants taken away where they stand thickest, the remaining bulbs will grow to a larger size. The ground should be hoed at least three times in the early part of their growth; but if the season proves damp, and weeds vegetate luxuriantly, they must be removed by the hand, because, after the Onions have begun to bulb, it would be improper to stir them with a hoe.

When the greenness is gone out of the tops of Onions, it is time to take them up, for from this time the fibrous roots decay. After they are pulled, they should be laid out to dry, and when dry, removed to a place of shelter.

The small Onions may be planted in the spring following; even an Onion which is partly rotten will produce good bulbs, if the seed stems be taken off as soon as they appear.

The *Alium Fistulosum*, or Welsh Onions, are cultivated for spring salad; they form no bulbs, but are very hardy. If the seed be sown early in September in rich ground, although the crops may die down in the Winter, yet the roots will continue sound, and put up new leaves early in the spring.

The *Alium Proliferum*, or Tree Onion, is propagated by planting the bulbs in spring or autumn, either the root bulbs, or those produced on the top of the stalks; the latter, if planted in the spring, will produce fine Onions. These may be planted in rows with a dibble, the same as Shallots.

The *Potato Onion* is of late introduction into this country. It does not produce seed as other Onions, but is increased by the root. One single Onion will

produce six or seven in a clump, under ground, similar to potatoes.

The bulbs are generally planted in the spring, from twelve to eighteen inches apart, but they will survive the winter, if planted in the fall, by being slightly covered.

PARSLEY. PERSIL. *Apium petroselinum.*

VARIETIES.—*Curled, or Double—Siberian—Hamburg, or Large rooted—Dwarf Curled.*

As Parsley seed, sown late in the season, is apt to lay in the ground some time before it vegetates, the general crop should be sown by the early part of April, in drills an inch deep, and one foot asunder. After the plants are up, let them be kept clean by frequent hoeings. In order to have Parsley green through the winter, the old leaves should be picked off in September. If some of the roots be taken up early in November, and laid in a frame or light cellar, the leaves will keep green a long time; the remainder may be covered up with straw in the place where it grows.

PARSNIP. PANAIS. *Pastinaca sativa.*

VARIETIES.—*Large Dutch, or Swelling.*

Parsnip seed may be sowed from the middle of March to the last week in April, in drills one inch deep and fourteen inches apart; but as this vegetable requires the whole season to grow in, the sooner the seed is planted the better. Parsnips grow best

in a deep soil manured well the preceding fall. Sow the seeds thick along the drills, and rake them in evenly.

When the plants are two or three inches high, thin them to the distance of six or eight inches in the rows. They should be kept free from weeds by regular hoeings through the summer; and in the fall they will be fit for use.

PEPPER. POIVRE OU PIMENT. *Capsicum annuum.*

VARIETIES.—*Long or Cayenne—Tomato or Squash Shaped—Bell or Ox-Heart—Cherry—Bird or West Indian.*

The seeds of the different kinds of *Capsicums* may be sown in a hot bed in March, or on a warm border early in May. The plants may be afterwards transplanted into good rich ground from eighteen inches to two feet distant from each other.

Those who do not want Peppers early in the season, may sow the seeds in the open ground in May, in drills two feet asunder, and half an inch deep. When the plants are grown an inch or two high, thin them to the distance of fifteen or eighteen inches in the rows. The ground should be afterwards hoed deep round the plants, and kept free from weeds by repeated hoeings.

PEAS. Pois. *Pisum sativum*.

VARIETIES.—*Early Washington* (or *May Pea*), grows to the height of 2 1-2 feet—*Early Double blossomed Frame* 3 feet—*Early Nimble Dick* 2 1-2 feet—*Early Frame* 2 1-2 feet—*Early Golden Hotspur* 3 feet—*Early Charlton* 3 feet—*Early Petersburg* 2 1-2 feet—*Dwarf Blue Imperial* 2 feet—*Dwarf Blue Prussian* 2 1-2 feet—*Dwarf Prolific*, or *Poor Man's*, or *Strawberry* 1 1-2 feet—*Dwarf Spanish* or *Fan*, 1 foot—*Dwarf Marrowfat* 3 1-2 feet—*Dwarf Sugar*, (eatable pods) 3 feet—*Dwarf White Albany* 1 1-2 feet (*Field Pea*)—*New Nonpareil* 3 feet—*Ladies' finger Marrows*—*Waterloo Blues* 4 feet—*Matchless* or *true Fall Marrowfat* 6 feet—*Large Gray Rouncival* 4 feet—*Dutch Gray* 2 1-2 feet—*Knight's Tall Marrows*, or *Honey Pea* 6 feet—*Knight's Dwarf Marrows* 2 feet—*Tall Crooked Podded Sugar* 6 feet, (eatable pods)—*Dwarf Green Albany* 1 1-2 feet (*Field Pea*).

The above list and description of the most esteemed kinds of Peas, is taken from the Catalogue of the Messrs. Thorburn and Sons of New-York. If they are rightly described, they will grow to different heights, according to soil and season. This description, however, may serve as a guide for the gardener in planting. The Dwarf Peas require less distance between row and row, and shorter sticks than the tall kinds.

Planting the early kinds of Peas should commence as soon in the spring as the ground can be brought into good condition: all the other sorts, as well as the early, will answer for successive crops; to obtain which, a few of the most esteemed kinds

should be planted at the same time every two weeks, from March until the end of May. Persons desirous of having Peas throughout the summer and fall, may plant a few in June, July and August. The Peas should be then soaked in soft water five or six hours before planting, and if the ground be dry it should be watered in the drills.

Gardeners practice different modes of planting Peas ; some plant them in ridges, others in drills, some in single rows, others in double, some use sticks for the dwarf kinds, and others not ; those who study neatness will have them all rodded though the most dwarfish may do without.

All the different sorts of Peas may be planted in double or single rows from four to six feet apart according to the different heights they may be expected to grow. If two drills be made three inches deep, and six or eight inches apart, and the seed dropped along each drill moderately thick, they will yield better than single rows, and will save sticks. When the plants are two or three inches high let them be hoed, drawing at the same time a little earth up to their stems, when they get to double that height let them be hoed again, at the same time place a row of sticks in the middle of your double rows, and a few shorter and smaller ones on the outside of each row, to assist the Peas in climbing to the main support. You must be governed as to the length of your sticks by the description of your peas. There is a great advantage in having sticks of a suitable height, to the various kinds of Peas ; the sticks should not only be sufficiently tall but also branchy, that the plants may readily take hold ; and they should be prepared fan-fashion, so that the side branches may extend only along the rows. As the plants progress in growth, let them be repeatedly hoed and earthed up ; this will promote a plentiful bearing.

POTATOES. POMME DE TERRE. *Solanum tuberosum.*

The varieties of Potatoes being very numerous, it is unnecessary for me to point out any particular kinds; some of the earliest should however be planted first in the spring, to produce young Potatoes in due season, but they are not so suitable for a full crop as the late varieties.

Potatoes being of such extensive utility, various expedients have been contrived with a view to find out the best method of preparing the seed. In many parts of England (where Potatoes equal to any in the world are raised,) the farmers never plant Potatoes whole, they take the Potatoes as they come to hand, and in cutting them take care to have two good eyes in each set, the small Potatoes are deprived of the sprout or nose end, as it is generally considered that this is essentially necessary to the production of a good crop. I have frequently known from five to 600 bushels raised from an acre with small Potatoes alone, cut in this way. Some prefer planting the Potatoes immediately after they are cut; the better way is to get them cut one or two weeks before the time of planting, and to lay them out on a barn or garret floor to dry.

Potatoes may be planted from the first week in April until July, either in hills or drills; the best way for a garden is to plant them in drills four or five inches deep, and about thirty inches asunder, the sets may be dropped six or eight inches apart, and if a small quantity of combmaker's horn shavings or sea weed be used as a manure for the early kinds, it will expedite their growth; the ground should be hoed as soon as the plants come up, and as they progress in growth it will be proper to mould or earth them up twice.

POTATO, SWEET. POMME DE TERRE, DOUCE.
Convolvulus batatas.

Sweet Potatoes may be raised in the vicinity of New-York, by means of a hot bed; they should be planted whole, early in April, three or four inches deep and about the same distance apart. In about a month they will throw up sprouts. When these are three inches above ground, part them off from the Potato, which if suffered to remain will produce more sprouts for a successive planting; transplant them into rich light soil in rows four feet apart and the plants about a foot apart, in the rows, or in hills four feet apart. Keep them clear of weeds until the vines begin to cover the ground, after which they will grow freely.

In sandy ground it is well to put a shovel full of rotten manure to each plant.

**PUMPKINS. CITROUILLE OU POTIRON. Cucur-
 bita pepo.**

VARIETIES—*Large Cheese—Connecticut Field—
 Finest Yellow Family—Mammoth.*

Pumpkins are planted in hills which require to be eight or ten feet apart, two or three plants will be sufficient in each; they are not so tenacious of a particular soil as either Melons or Cucumbers, but will grow freely in any dry and tolerably rich ground; the seed may be planted in May and June, in the open ground, and the plants should be kept constantly clean and free from weeds.

When you intend to cultivate either Melons, Cucumbers, Squashes, Pumpkins, or the like kinds, on an extensive scale, you can prepare the ground with the plough, which will save much labour;

and also, afterwards as the weeds advance, plough and harrow between the plants till they begin to run, after which, the hoe must be used.

PATIENCE DOCK. RHUBARBE DES MOINES.
Rumex patientia.

The *Rumex Patientia* is perennial; the leaves are large, long and succulent, and are by some very much esteemed. The plant may be propagated by offsets from the root, taken off in the spring, or late autumn months, and planted in rows eighteen inches asunder, and eight inches from one another in the rows. If the seed be sown in October or November, it will rise freely in the spring, or it may be planted in March or April, in drills one inch and a half deep, and eighteen inches apart, and afterwards thinned to the proper distance.

RADISH RADIS OU RAVE. *Raphanis sativus,*
etc.

VARIETIES—*Early Frame—Early Scarlet—Short Top—Long Salmon—Purple Short Top—Long White Summer, or Naples—Cherry or Scarlet Turnip rooted—Violet coloured Turnip—White Turnip rooted—Black, Fall or Spanish.*

Those who are desirous of having good Radishes early in the spring, should have a warm border prepared in the very best manner, so as to be ready to sow some of the short top scarlet by the middle of March. If the ground should not be in good condition to receive the seed at this time, let it be delayed a few days; and by the first of April take care to have another bed prepared in the open

ground, by digging in some good strong manure. The seed may be sown broadcast, and raked evenly in. If you wish to have Radishes in regular succession, sow seeds of the most esteemed kinds every two weeks until the middle of May : if any be sown after this, it should be the White Turnip or Black Spanish, these will endure the heat better than the others, and may be sown in drills in small quantities throughout the summer, until the latter end of August, when the other kinds may be sown in regular succession until the first of October. Market gardeners may prepare the ground with a plough, and cover such seeds as may be sown broadcast with a harrow.

ROCAMBOLE. AIL D'ESPAGNE. *Allium scorodoprasum.*

This and the *Allium Sativum* or common Garlic, is raised in some gardens. Many people consider the Rocambole to be of a milder and better flavour, but the bulbs are not so large as those of the Garlick.

This is a very hardy plant, and will grow in almost every soil or situation. It is propagated either by the roots or seeds, the former ought to be separated and planted, at the same time, and in the same manner as Shallots.

When raised from seed ; they may be sown in drills either shortly after the seeds are ripe, or in the succeeding Spring ; they require only to be kept clear of weeds ; and, in the following autumn, may be taken up, the bulbs parted, and planted as before

RHUBARB. RHUBARBE. *Rheum*.

Rhubarb is a genus of exotic plants, comprizing seven species, of which the following are the principal :—

1. The *Rhuponticum* or Common Rhubarb, a native of Thrace and Syria, which has long been cultivated in British gardens for the footstalks of the leaves, that are frequently used in pies and tarts.

2. The *Rheum Undulatum* is also cultivated for the same use.

3. The *Palmatum* or True Officinale Rhubarb, is a native of China and the East Indies, whence its culture has been introduced into Europe ; it produces a thick fleshy root, externally yellowish brown, but internally of a bright yellow colour streaked with red veins. It grows to good perfection in Scotland as far North as Perthshire, (Lat. 56 ;) also in England, Turkey, and various other parts of Europe. When the importance of this root is considered as a medicine, it is a matter of astonishment that it has not been more generally introduced into the United States.

The several kinds of Rhubarb may be propagated by offsets, taken from the roots early in the Spring ; or from seed sown late in the Fall, or in March and the early part of April. The indispensable points to the production of good roots of the *Palmatum*, are depth and richness of soil, which should be well pulverized before the plants are set out. Prepare beds of fine mould eighteen inches deep ; in these put in the plants from the seed bed, ten or twelve inches apart, this must be done when they have attained the height of four or five inches, and have thrown out as many leaves.

The first season is the most critical, and much care is necessary. If the weather be hot, the nur-

sery must be shaded, and at all events continually watered ; for water, *though hurtful to old plants*, is now of the first consequence. Wet weather is the most proper time to plant in. The beds must be kept free from weeds through the Summer, and on the approach of severe weather, covered up with dry litter. In the early part of the Spring this must be taken off, and in the beginning of April the plants must be transplanted into ground dug and prepared as directed for Asparagus. Those who cultivate the *Palmatum* for the sake of the roots, should dig the ground two or three spades deep, and place the plants four feet apart every way. As to the other kinds it is not so particular, so as the plants have room to grow. In the early part of November, the leaves being then decayed, the beds should be covered with dry litter ; before this be done, a little earth should be drawn round the crowns of the plants. If there be any danger of water lodging, make trenches to carry it off. In the month of March the beds should be stripped of their covering, and the ground well hoed and cleared of weeds. If Rhubarb stalks be required for use early in the spring, they may be obtained by placing flour barrels or deep tubs over some of the plants, and covering them up with fresh stable dung. Some make the beds at once with the seeds ; the objections to this plan are, first, that the plants cannot be so well protected in the early part of their growth as those raised in small beds ; and, secondly, that the ground becomes so hard in the course of a year as to prevent the roots from running to the depth they otherwise would.

The roots of the *Palmatum* must not be taken up until six or seven years old. The stalks of the other kinds may be cut every spring as soon as the leaves are expanded. After being stripped of their outer

covering and cut up into small pieces, they are used in pies and tarts. Cobbett supposes, "that a hundred wagon loads of Rhubarb stalks are annually sold in the markets of London, at a shilling sterling per bunch." (American Gardener.) Rhubarb makes an excellent preserve when cut into small pieces about an inch and a half long, and parboiled with sugar.

In England, large drying houses have been erected, for the purpose of curing the roots of the *Palmatum*; but this business may be done in this country as it is done in China: by the heat of the sun. After the roots have been well washed, the small fibres should be cut off. These are then cut transversely into pieces of about two inches thick, and dried on boards, turning them several times a day, in order to prevent the escape of the yellow juice, on which its medicinal qualities depend. In four or five days, they may be strung upon strings, and suspended in a shady, but airy and dry situation, and in two months afterwards it will be fit for the market.

SALSIFY. SALSIFIS OR CERCIFIS. *Tragopogon porrifolius*.

This plant grows spontaneously in the open fields in England, and is by some highly valued for its white eatable root, and for the young shoots rising in the spring from plants a year old; these, when gathered while green and tender, are good to boil and eat in the manner of *Asparagus*. Some have carried their fondness for this plant so far as to call it Vegetable Oyster. They require the same kind of soil and management as Carrots and Parsnips.

The seeds may be sown the latter end of March, or early in April, an inch deep in drills twelve inches apart. When the plants are two or three inches high, they should be thinned to the distance of six inches from each other, and afterwards hoed. The ground should be kept clean and loose round the plants, by repeated hoeings; and in the autumn they will be fit for use. The roots may be taken up late in the fall, and secured in moist sand from the air; or be suffered to remain out, and dug up when wanted.

The mode of cooking recommended by an American author is, "to cut the roots transversely into thin pieces; boil them in water, or milk and water; when boiled soft, mash them and thicken the whole with flour to some degree of stiffness; then fry them in the fat of salt pork or butter; they are a luxury." In England the tops are boiled, and served up with poached eggs.

SCORZONARA. SCORSONÈRE. *Scorzonera*
Hispanica.

This plant has long been raised in British gardens for culinary purposes, and especially as an ingredient in soups, on account of its palatable and nourishing roots. Some boil and eat them like Carrots, &c.; in which case, they should be deprived of their rind, and immersed in cold water for half an hour, or they will be bitter. They are raised precisely in the same manner as Salsify. If the seed be sown in April, in a good deep soil, the roots will attain perfection in autumn, and continue good all the winter. They last from three to four years,

according to the quality of the earth and care bestowed on them ; but it is better to raise a few from seed every year.

SEA-KALE. CHOU MARIN. *Crambe maritima.*

This plant is found on the sea shore in the southern parts of England, where it grows spontaneously. As soon as it appears above ground, the inhabitants remove the pebbles or sand with which it is usually covered to the depth of several inches, and cut off the young and tender leaves and stalks, as yet unexpanded, and in a blanched state, close to the crown of the root ; it is then in its greatest perfection. When the leaves are full grown, they become hard and bitter, and the plant is not eatable.

It is cultivated in private gardens, and for sale in various parts of England. Cultivators have differed widely respecting the mode of treating this plant ; many conceiving that stones, gravel, and sea sand are essential to its growth, have gone to the expense of providing it : but it has been discovered that it will grow much more luxuriantly in a rich sandy loam, where the roots can penetrate to a great depth.

The seeds of Sea-Kale should be sown as soon as they are ripe. If fresh seeds cannot be obtained by the end of October, let them be sown as early in the Spring as the ground can be brought into good condition, in drills an inch and a half deep, and fourteen or sixteen inches asunder ; the plants should be afterwards thinned out to the distance of six or eight inches from each other in the rows, and

kept clear of weeds by frequent hoeings through the summer. When the plants are a year old, every third row may be taken up, and also every other plant in each row, leaving them fourteen or sixteen inches apart; these may be transplanted into good ground prepared as directed for Asparagus. Plant two rows in each bed, about eighteen inches apart; the best way is to make two drills three inches deep, and with a dibble set in the plants fifteen or sixteen inches from each other; when these drills are filled, the crowns of the plants will be covered nearly two inches, but they will soon push through the earth. The plants left in the seed bed may form a permanent bed, which should be forked or dug between the rows; previous to this being done, lay on an inch or two of good rotten manure, and incorporate it with the earth around the plants.

Some make new plantations with pieces of old roots, which should be cut up in lengths of about two inches, and planted in March or April, three or four inches deep, at the distances before directed for the plants.

At the approach of winter, the leaves will die away and disappear. The beds should be then thickly covered with dung, leaves or sea weed; this will not only protect the plants from frost, but will cause them to shoot up early in the spring. As soon as the frost is out of the ground, this may be taken off, or if well rotted, it may be mixed up with the earth; the crowns of the plants should then be covered to the depth of ten or twelve inches for blanching.

Some blanch it by heaping on it sea sand; some, common sand and gravel; and others with large garden pots inverted, and placed immediately over the plants. If these pots be covered up with fresh

horse dung, it will forward the shoots in growth, and make them sweeter and more tender.

When your plants have been covered in either method three or four weeks, examine them, and if you find that the stalks have shot up three or four inches, you may begin cutting; should you wait till all the shoots are of considerable length, your crop will come in too much at once, for in this plant there is not that successive growth which there is in Asparagus; you may continue cutting until you see the heads of flowers begin to form; and if at this time you uncover it entirely, and let it proceed to that state in which Broccoli is usually cut, and use it as such, you will find it an excellent substitute; and this greatly enhances the value of the plant; as Broccoli does not stand our winter frost, and can only be had when carefully protected, (as recommended under that head;) but this plant is sufficiently hardy to bear our winter's frost without much injury. You are not to weaken the roots too much by over cutting, for in that case it would injure their next year's bearing; some of the shoots should be allowed to grow, to carry on a proper vegetation, to strengthen and enlarge the roots. Great care should be taken in cutting, not to injure the crowns of the roots by cutting the shoots too close to them. Sea-Kale should be dressed soon after it is cut, as the goodness of the article greatly depends on its not being long exposed to the air.

If you choose to force Sea-Kale, dig a trench all round a small bed, about three feet wide and thirty inches deep; fill it with hot dung, and as it sinks, raise it. This will make the plants grow; and if hand lights are set over them, it will accelerate their growth.

SORREL. OSEILLE DES JARDINS. *Rumax acetosa.*

The seeds of the Broad Leaved English Sorrel, and also of the Round Leaved or French Sorrel, may be sown in April and May, in beds or borders, and covered lightly. When the plants are up, keep them free from weeds; they may be afterwards thinned to the distance of nine inches from each other, or transplanted into fresh ground.

The old standing roots of either kind may be separated and planted for increase; this should be done in April. As fast as the plants shoot up to seed cut them down close, and a new crop of leaves will be produced. It is used raw as a salad, or boiled for greens.

SKIRRET. CHERVIS, OU GYROLE. *Sium sisarum.*

This plant is cultivated first by seed, and afterwards by offsets taken from the old roots, and planted very early in the spring, and before they begin to shoot, but it is best to raise a small bed from seed every year, as the roots grow longer than those raised from slips, and are less liable to be sticky. The seed may be sown in drills the latter end of March, or early in April, and managed the same as Salsify, Parsnips, &c. In Autumn, when the leaves begin to decay, the roots will be fit to use, and continue so till they begin to shoot in the spring.

Skirrets should be planted in a light moist soil, for in dry land the roots are generally small, unless the season proves wet. The root of the Skirret is composed of several fleshy tubers, as large as a man's finger, and joining together at top. They are eaten

boiled, and stewed with butter, pepper and salt, or rolled in flour and fried, or else cold with oil and vinegar, being first boiled. They have much of the taste and flavour of a Parsnip, but a great deal more palatable.

SHALLOT. ECHALOTE. *Allium Ascalonicum.*

The true Shallot is a native of Palestine, and is considered to possess the most agreeable flavour of any of the *Allium* genus. It is consequently highly deserving of cultivation. They are propagated by planting bulbs or offsets in the fall of the year; which may be set out with a dibble, in rows twelve inches apart, by four to six inches distance in the rows; or they may be placed in drills two or three inches deep and covered up with a trowel or hoe. The gardeners about New-York plant large quantities of the bulbs early in September; by this means they are enabled to supply the markets in April and May with a Mild *Allium* which meets a ready sale.

After the tops die down, the bulbs must be taken up, and the offsets divided: a portion of these should be kept in a dry place to plant the ensuing Autumn.

SPINACH OR SPINNAGE. EPINARD. *Spinacia.*

VARIETIES.—*Round Leaved, or Summer—Prickly or Fall—New Zealand, or Tetragona expansa.*

The *Spinacia Oleracea*, or common Spinach, is very hardy, the seed of which should be sown in se-

veral sowings from the first to the end of September; the forwardest of these, if covered up with straw at the approach of cold weather, will furnish greens for the table when other vegetables are scarce, and the latter crops will recover the effects of a hard winter, and produce a wholesome vegetable early in the spring.

If Spinach seed be sown in rich ground in March and April, it will grow freely, but it must be cut before the approach of hot weather, or it will run to seed.

It is altogether useless to sow Spinach seed in poor ground; let the ground be well manured, with good strong dung, and it will well reward you for your trouble by its abundant produce.

The New Zealand Spinach is of late introduction into this country; its nature seems to be opposite to the common Spinach, as it will endure the heat better than the cold. It may be obtained in the summer, by planting the seeds in April and May. Being of luxuriant growth, it should be planted in hills three feet apart, and about two seeds in a hill. The leaves will be fit for use during the summer, and until late in the fall.

SQUASH. GOURDE GIRAUMON OU POTIRON.
Cucurbita melopepa.

VARIETIES.—*Early Bush Summer*—*Summer Crook Neck*—*Winter Crook Neck, or Bell Vegetable Marrow.*

The Early Bush Squashes are best for garden culture, and their produce is allowed to be equal in quality to the running kinds. The Vegetable Mar-

row is also well deserving of cultivation. The seeds of these may be planted early in May, in hills four or five feet apart, prepared as directed for Melons and Cucumbers. The Running Squash may be planted at the same time and in the same manner as Pumpkins; and the management of these various kinds of vines must be the same in every respect as Cucumbers and Melons. It is always best to put five or six seeds in a hill, as a guard against accidents. When the plants are past danger they can be thinned to two or three in a hill.

TOMATO. TOMATE, OU POMME D'AMOUR.
Solanum Lycopersicum.

The Tomato, or Love Apple, is much cultivated for its fruit in soups and sauces, to which it imparts an agreeable acid flavour; and is also stewed and dressed in various ways, and very much admired.

The seeds should be sown the early part of March, in a slight hotbed, and the plants set out in the open ground the first week in May. In private gardens it will be necessary to plant them near a fence, or to provide trellices for them to be trained to, in the manner recommended for Nasturtiums; they will however do very well if planted out four feet distant from each other every way.

Tomatoes may be brought to perfection late in the summer, by sowing the seed in the open ground the first week in May; these plants will be fit to transplant early in June.

TURNIP. NAVET. *Brassica rapa*.

[Those mared f, are best for family use.]

VARIETIES.—*Early White Dutch, f.—Early Garden Stone, f.—White Flat or Globe—Green Round or Green Top—Red Round, f. or Red Top—Swans Egg, f.—Large English Norfolk—Long Tankard, or Hanover, f.—Long Yellow French, f.—Yellow Maltese, f.—Yellow Aberdeen—Yellow Stone, f.—Yellow Swedish or Russia.*

This is a valuable vegetable, and its culture generally very well understood. It being the last esculent vegetable on our catalogue, that is raised from seeds sold at our several seed stores, I shall endeavour to stimulate those of our yeomanry who have hitherto neglected the culture of this field, as well as garden production, to exertion and diligence, by inserting a few short extracts from a paper that now lies before me. The following statement relates to a country that contains only about 60 millions of acres, capable of cultivation, and which supports upwards of 20 millions of human beings, besides millions of brutes from the products of its soil ; she also exports vast quantities of some kinds of produce from this source.

“ Culture of Turnips.—Until the beginning of the eighteenth century, this valuable root was cultivated only in gardens or other small spots for culinary purposes ; but Lord Townsend, who attending king George the first in one of his excursions to Germany in the quality of Secretary of State, observed the Turnip cultivated in open and extensive fields, as fodder for cattle, and spreading fertility over lands naturally barren, on his return to England, brought over some of the seed, and strongly recommended the practice which he had witnessed, to the adoption of his own tenants, who occupied a soil similar to that of Hanover. The experi-

ment succeeded ; the cultivation of Field Turnips gradually spread over the whole county of Norfolk, and has made its way into every other district of England. The reputation of the county as an agricultural district, dates from the vast improvements of heaths, wastes, sheep walks, and warrens, by enclosing and manuring ; the fruits of the zealous exertions of Lord Townsend and a few neighbouring land owners, which were ere long imitated by others. Since these improvements were effected, rents have risen in that county from one or two shillings to twenty shillings an acre ; a county consisting chiefly of sheep walks and rabbit warrens has been rendered highly productive, and by dint of management, what was thus gained, has been preserved and improved even to the present moment. Some of the finest corn crops in the world are now growing upon land, which, before the introduction of the Turnip husbandry, produced a very scanty supply of grass for a few lean and half starved rabbits.

“ Mr Colquhoun in his ‘Statistical researches’ estimated the value of the Turnip crop annually growing in the united kingdom of Great Britain and Ireland at fourteen million pounds sterling, (equal to upwards of SIXTY MILLIONS OF DOLLARS.) But when we further recollect, that it enables the agriculturist to reclaim and cultivate land, which without its aid, would remain in a hopeless state of natural barrenness, that it leaves the land clean and in fine condition, and also to insure a good crop of Barley and a kind plant of Clover, and that this Clover is found a most excellent preparative for Wheat, it will appear that the subsequent advantages derived from a crop of Turnips must infinitely exceed its estimated value as fodder for cattle. (Sir William Scott in the Quarterly Review.”)

As I have undertaken to "assist the Young Gardener," I shall proceed to point out the most proper means of cultivating this truly valuable vegetable in his garden.

The preceding remarks show the kind of land that may be made capable of producing not only Turnips, but other things of equal value. It must however be granted, that some soils naturally suit particular kinds of vegetables better than others, and that in general, exotic plants will succeed best in such soils as are nearest like their own native soil. As we have not always a choice, I would inform the Young Gardener, if he has a very light soil which is not suitable for vegetables in general, he may sometimes get two crops of Turnips from it in one year, by sowing seed for the first crop early in March, and that for his second, in the middle of August. For general crops it will be better to have ground manured with short rotten dung or compost containing a considerable proportion of coal or soap-er's ashes. Ground that has been well manured for preceeding crops, and old ground fresh broken up, will suit well for Turnips.

The most esteemed kinds of Turnips for gardens, are marked in the catalogue, I shall therefore leave my readers to their own choice.

As the Yellow Swedish or Russian Turnip, or Ruta Baga, requires different treatment, I shall quote a few lines from the American Gardener, by William Cobbett, the great advocate for Ruta Baga.

"The Swedish Turnip, so generally preferred for table use here, and so seldom used for the table in England, ought to be sown *early* in June, in rows at a foot apart, and thinned to three inches in the rows. About the middle of July they should be transplanted upon ridges three feet apart (in a gar-

den) and during their growth, ought to be kept clear of weeds, and to be dug between twice at least as deep as a good spade can be made to go.) But the Swedish Turnip is of further use as producing most excellent greens in the Spring, and at a very early season. To draw this benefit from them, the best way is to leave a row or two in the ground, and when the winter is about to set in, cover them all over with straw or cedar boughs. Take these off when the winter breaks up, and you will have very early and most excellent greens; and when you have done with the greens, the Turnips are very good to eat."

If the seed of the Russia Turnip be sown either broadcast, or in drills early in July, they will make fine roots by autumn without transplanting, provided the ground be good and well worked. When the plants are up strong they must be hoed and thinned to the distance of 12 or 15 inches from each other, another hoeing will be necessary in 5 or 6 weeks afterwards. This will make them grow freely.

HOP. HOUBLON. *Humulus lupulus*.

Although the Hop is not a culinary vegetable, as it is more or less used in every part of our country, it may not be amiss to treat of its culture. It is presumed, that in proportion as habits of temperance are inculcated, our citizens will have recourse to beer as a wholesome beverage; and as a great deal depends on the manner in which Hops are cured, I purpose giving directions for their management throughout; so as to enable those who choose, to prepare their own. My information is collected chiefly from Loudon's *Encyclopædia of plants*.

The Hop has been cultivated in Europe an unknown length of time for its flowers, which are used for preserving beer. Its culture was introduced from Flanders in the reign of Henry the Eighth; though indigenous both in Scotland and Ireland it is little cultivated in those countries, owing to the humidity of their autumnal season. Like other plants of this sort, the Hop bears its flowers on different individuals; the female plants, therefore, are alone cultivated. There are several varieties grown in Kent and Surrey, under the name of Flemish, Canterbury, Goldings &c.; the first is the most hardy, differing little from the wild or Hedge Hop; the Goldings is a very improved highly productive variety, but more subject to the blight than the other. The Hop prefers a deep loamy soil on a dry bottom; a sheltered situation, but at the same time not so confined as to prevent a free circulation of air. The soil requires to be well pulverized and manured previous to planting. In Hop districts, the ground is generally trenched either with a plough or spade. The mode of planting is generally in rows six feet apart, and the same distance in the row. Five, six or seven plants are generally placed together in a circular form and at a distance of five or six feet from each other. The plants or cuttings are procured from the most healthy of the old stools; each should have two joints or buds; from the one which is placed in the ground springs the root, and from the other the stalk. Some plant the cuttings at once where they are to remain, and by others they are nursed a year in a garden. An interval crop of Beans or Cabbages is generally taken the first year. Sometimes no poles are placed at the plants till the second year, and then only short ones of six or seven feet. The third year the Hop generally comes into full bear-

ing, and then from four to six poles from fourteen to sixteen feet in length are placed to each hill. The most durable timber for poles is that of the Spanish Chesnut, which is much grown in Kent as coppice wood for that purpose. The after culture of the Hop consists in stirring the soil and keeping it free from weeds; in guiding the shoots to the poles, and sometimes tying them for that purpose with bass or withered rushes; in eradicating any superfluous shoots which may arise from the root, and in raising a small heap of earth over the root to nourish the plant. Hops are known to be ready for gathering when the chaffy capsules acquire a brown colour, and a firm consistence. Each chaffy capsule or leafed calyx contains one seed. Before these are picked, the poles with the attached stalks are pulled up, and placed horizontally on frames of wood two or three poles at a time. The Hops are then picked off by women and children. After being carefully separated from the leaves and stalks, they are dropped into a large cloth hung all round within the frame on tenter hooks. When the cloth is full, the Hops are emptied into a large sack, which is carried home, and the Hops laid on a kiln to be dried. This is always done as soon as possible after they are picked, or they are apt to sustain considerable damage, both in colour and flavour, if allowed to remain long in the green state in which they are picked. In very warm weather, and when they are picked in a moist state, they will often heat in five or six hours; for this reason the kilns are kept constantly at work, both night and day, from the commencement to the conclusion of the Hop-picking season. The operation of drying hops is not materially different from that of drying malt, and the kilns are of the same construction. The Hops are spread on a hair cloth,

from eight to twelve inches deep, according as the season is dry or wet, and the Hops ripe or immature. When the ends of the Hop stalks become quite shrivelled and dry, they are taken off the kiln and laid on a boarded floor till they become quite cool, when they are put into bags.

The bagging of Hops is thus performed : in the floor of the room where Hops are laid to cool, there is a round hole or trap equal in size to the mouth of a Hop bag. After tying a handful of Hops in each of the lower corners of a large bag, which serve after for handles, the mouth of the bag is fixed securely to a strong hoop, which is made to rest on the hedges of the hole or trap ; and the bag itself being then dropped through the hole, the packers go into it, when a person who attends for the purpose, puts in the Hops in small quantities, in order to give the packer an opportunity of packing and trampling them as hard as possible. When the bag is filled, and the Hops trampled in so hard as that it will hold no more, it is drawn up, unloosed from the hoop, and the end sewed up, other two handles having been previously formed in the corners in the manner mentioned above. The brightest and finest coloured Hops are put into pockets or fine bagging, and the brown into course or heavy bagging. The former are chiefly used for brewing fine ale, and the latter by the porter brewers. But when Hops are intended to be kept two or three years, they are put into bags of strong cloth and firmly pressed so as to exclude the air.

The stripping and stacking of the poles succeeds to the operation of picking. The shoots or bind being stripped off, such poles as are not decayed are set up together in a conical pile of three or four hundred, the centre of which is formed by three

stout poles bound together a few feet from their tops, and their lower ends spread out.

The produce of no crop is so liable to variation as that of the Hop ; in a good season an acre will produce 20 cwt. but from 10 to 12 cwt. is considered a tolerable average crop. The quality of Hops is estimated by the abundance or scarcity of an unctious clammy powder which adheres to them, and by their bright yellow colour. The expenses of forming a Hop plantation are considerable ; but once in bearing, it will continue so for ten or fifteen years before it requires to be renewed. The Hop is peculiarly liable to diseases ; when young it is devoured by fleas of different kinds, at a more advanced stage it is attacked by the green fly, red spider, and ottermoth, the larvæ of which prey even upon its roots. The honey dew often materially injures the Hop crop ; and the mould, the fire-blast, and other blights injure it at different times towards the latter period of the growth of the plants.

The young shoots of both wild and cultivated Hops are considered by some as very wholesome, and are frequently gathered early in the Spring, boiled, and eaten as asparagus. The stalk and leaves will dye wool yellow. From the stalk a strong cloth is made in Sweden, the mode of preparing which is described by Linnæus in his *Flora Suecica*. A decoction of the roots is said to be as good a sudorific as Sarsaparilla ; and the smell of the flowers is soporific. A pillow filled with Hop flowers will induce sleep, unattended with the bad effects of soporifics which require to be taken internally.

HORSE-RADISH. RAIFORT. *Cochlearia Armo- racia.*

This plant is propagated by cuttings from the root, either cut from the top an inch or two long, or some old roots cut into pieces of that length, or by offsets that arise from the sides of the main root, retaining the crowns or top shoots in as many parts as possible. These should be planted as early in the spring as practicable, in rows two feet apart, and six or eight inches from each other in the rows. The ground should be well manured and dug two spades deep, and the cuttings should be sunk full ten inches with the crowns upright; this being done, level the surface of the ground, and afterwards keep it free from weeds until the plants are full grown. With this management the roots will be long and straight, and the second year after the planting will be fit for use. They may be taken up the first year, but then the roots will be slender, therefore it is the better way to let them remain till the second. If in taking up the roots some offsets be left in the ground, they will produce a successive supply for many years.



AROMATIC, POT, AND SWEET HERBS.

Graines d'herbes à l'usage de la cuisine ou oderiférantes.

Anise,	<i>Pimpinella anisum.</i>
Basil Sweet,	<i>Ocimum basilicum.</i>
Bush Basil,	<i>do. minimum.</i>
Borage,	<i>Borago officinalis.</i>
Caraway,	<i>Carum carvi.</i>
Clary,	<i>Salvia sclara.</i>
Coriander,	<i>Coriandrum sativum.</i>
Dill,	<i>Anethum graveolens.</i>
*Fennel, Common,	<i>do. fœniculum.</i>
* do. Sweet,	<i>do. dulce.</i>

Marigold, Pot,	<i>Calendula officinalis.</i>
* Marjoram Sweet,	<i>Origanum marjorana.</i>
* Mint, Spear,	<i>Mentha virides.</i>
* do. Pepper,	<i>piperita.</i>
* do. Pennyroyal,	<i>pulegium.</i>
* Sage, Common,	<i>Salvia officinalis.</i>
Savory, Summer,	<i>Satureja hortensis.</i>
* do. Winter,	<i>montana.</i>
Smallage,	<i>Apium graveolens.</i>
* Tarragon,	<i>Artemisia dracunculus.</i>
* Thyme, Common,	<i>Thymus vulgaris.</i>
* do. Lemon,	<i>serpyllum.</i>

Aromatic Herbs are such as impart a strong spicy odour and savoury taste ; many of them are used as small pot herbs, and for sauces, stuffings, and other uses in cooking. As only a small quantity of these are necessary in private gardens, a bye corner may be allotted for them, and such medical herbs as may be wanted in a family.

It may be necessary for me to explain, as we go along, that there are three principal descriptive names given to plants, namely, Annuals, Biennials, and Perennials. The annuals being but of one season's duration, are raised every year from seed. The biennial kinds are raised from seed one year, continue till the second, and soon after die ; some of these should be also raised every year from seed. The perennials may be also raised from seed, but when once raised, they will continue on the same roots many years. Those marked * are of the latter description, and may be propagated by suckers, offsets, cuttings or partings of the roots.

Those who have not already a plantation of these herbs, may sow seeds of any of the different kinds in March or April, in drills about an inch deep and twelve inches apart, each kind by itself. The plants

may be afterwards transplanted into separate beds: or, if a drill for each kind be drawn two feet apart, the seed may be sown in them, and the plants afterwards thinned out to proper distances according to the natural growth of the different kinds of plants.

PLANTS CULTIVATED FOR MEDICINAL PURPOSES, &c.

Boneset or Thoroughwort	<i>Eupatorium perfoliatum.</i>
*Balm,	<i>Melissa officinalis.</i>
Bean, Castor Oil,	<i>Ricinus communis.</i>
Burdock,	<i>Arctium lappa.</i>
Catnep,	<i>Nepeta cataria.</i>
Celandine,	<i>Chelidonium majus.</i>
*Chamomile,	<i>Anthemis nobilis.</i>
*Comfrey,	<i>Symphytum officinale.</i>
*Elecampane,	<i>Inula Helenium.</i>
Feverfew,	<i>Matricaria Parthenium.</i>
*Horehound,	<i>Marubium vulgare.</i>
*Horsemint,	<i>Monarda punctata.</i>
*Hyssop,	<i>Hysopus officinalis.</i>
*Lavender,	<i>Lavendula spica.</i>
Lovage or Smellage,	<i>Ligusticum levisticum.</i>
*Mallow, Marsh,	<i>Althea officinalis.</i>
*Pink root, Carolina,	<i>Spigelia Marilandica.</i>
Poppy Opium, (annual,)	<i>Papaver somniferum.</i>
*Rosemary,	<i>Rosmarinus officinalis.</i>
*Rue, Garden,	<i>Ruta graveolens.</i>
*Scurllcap or Mad Dog Plant,	<i>Scutellaria Lateriflora.</i>
*Snake root, Virginian,	<i>Aristolochia serpentaria.</i>
*Southernwood,	<i>Artemisia abrotanum.</i>
*Speedwell, Virginian,	<i>Veronica Virginica.</i>
*Spikenard,	<i>Aralia racemosa.</i>
*Tausey,	<i>Tanacetum vulgare.</i>
*Wormwood,	<i>Artemisia absinthium.</i>

The generality of Aromatic, Sweet, and Medicinal Herbs, may be raised from seeds sown in March and April. The greater part of the above described plants are perennial, and will multiply from seeds they drop, or from partings of the roots. The offsets, roots, or young plants thus raised, should be planted at suitable distances from each other early in the spring. The beds should be afterwards kept free from weeds, and as the herbs come into flower, they should be cut on a dry day, and spread in a shady place to dry for winter use. [The best way to preserve them after they are dried, is to rub them so so as to pass them through a sieve, then pack them in bottles or boxes, each kind by itself; they should be afterwards kept in a dry place.] In the month of October, the beds should be examined. Lavender, Rosemary, and other tender herbs should be taken up, potted and placed in a frame or green house for the winter. Thyme, Hyssop, Winter Savory, Southernwood, Sage, Rue, and the like, will require their tops to be neatly dressed; and Pot Marjoram, Burnet, Tarragon, Tansey, Pennyroyal, Sorrel, Chamomile, Fennel, Horehound, Mint, Lovage, and other kinds of hardy perennial herbs, should be cut down close to the ground. After this, it will be proper to dig lightly and loosen the ground between the roots of the shrubby plants; but the beds of close-growing running plants, such as Mint, Running Thyme and all other creeping herbs, will not well admit of digging; therefore, after the stalks are cut down, and the beds cleared of weeds, dig the alleys and strew some of the loose earth evenly over the beds; and if the ground be rather poor or light, a top dressing of very rotten dung will be of considerable service.

This dressing will give proper nurture and protection to the roots of the plants, a neat appearance

to the whole, and in spring the shoots will rise with renewed vigour.

Having finished the catalogue, I proceed to give directions for making the most of a piece of ground well manured for early crops. In the general directions at the commencement, I observed that good rich manure was indispensably necessary to the production of some particular kinds of vegetables; it may be further observed, that rich ground will produce two or three valuable crops, but it requires some attention to make use of it to the best advantage. If the gardener have leisure to dig his ground in March or April, that he intends for Beans, Cucumbers, Tomatoes, Egg Plants, or other tender plants, he may raise Radishes, Spinach, Lettuce, or other Salads on it, by leaving a space for his hills or drills; or radish seed may be sown lightly over beds of Beets, Carrots or Parsnips, but they must not be suffered to run to seed, as this would injure the other plants. When the first crops are gathered, it requires a little consideration before a second is planted, in order that a sufficient quantity of the best of the ground be reserved for the most particular and valuable kinds of vegetables. That I may be understood, I have adopted the following plans, representing beds of earth, this will answer the same purpose as bringing my readers on the ground:

No. 1. The following lines represent drills six inches apart:

March 25.—Sow Parsley, or other small herbs.

Do. Radish Seed.

Do. Parsley, or other small herbs.

The Radishes being pulled early in May, leaves the intermediate ground for the other plants.

No. 2. Drills 10 or 12 inches apart :

April 1.—Sow Spinach or Radish Seed.

24.—Plant early Cabbage Plants.

1.—Sow Spinach or Radish Seeds.

By the time the Cabbage requires the whole of the ground, the Spinach or Radishes may be gathered.

If this bed be cleared of the second crop by the middle of July, it may be planted with Celery, Turnips, or Black Radishes. If the Cabbages be of the late kinds, the ground may be reserved for the first sowing of Spinach, Fetticus, Lettuce, &c. in which case it will require a fresh coat of manure.

No. 3. Rows or drills 14 inches apart :

March 20.—Plant Hardy Lettuce Plants.

Do. Hardy Lettuce Plants.

Hoe them the first week in April—previous to hoeing the second time, draw a drill between each row of plants, and plant beet or carrot seed ;

this may be covered up in hoeing the Lettuce, and by the time the plants are up strong, the Lettuce will be fit to cut.

If these roots are well attended to, they may be cleared off soon enough to produce fall Cabbage, Leeks, Celery, Turnips, Black Radishes, &c.

No. 4. Rows or drills 16 inches apart :

March 25.—Plant Hardy Lettuce Plants.

Do.	Hardy Lettuce Plants.
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April 20.—Plant early York Cabbage Plants, either between the rows or between the Lettuce.

As soon as the Lettuce is off, hoe the Cabbage and it will soon cover the ground.

This ground will be suitable for a crop of any of the kinds above mentioned, except Cabbage, the roots of which are apt to get defective, if the same ground be planted with Cabbage twice in succession.

The above, or preceding plans, present a fair specimen of what may be done on a small piece of good ground. If the young gardener will take the trouble to keep an account of his transactions, he would soon make discoveries of still greater importance. If he be not sufficiently acquainted with the different kinds of Cabbage Plants, for instance, so as to distinguish one from the other, he, by making a memorandum at the time of sowing the seed, would soon get acquainted with the different kinds of plants; he would also discover the difference in the growing of his seeds, and know who to blame if any particular kind should not come up.

The following represents a hot bed with four sashes, sown March 1st.

Thorburn's	Smith's	Early	Russell's	Bridgeman's
				Tomato and
Early York	Battersea Cab-		Early	Egg-Plant
				seeds in shal-
Cabbage seed.	bage seed.		Lettuce seed.	low drills.

It may be necessary to remind my readers of the necessity of being always prepared to sow Cabbage, Egg-Plant, Lettuce, and Tomato seeds in hot beds the last week in February or early in March ; for this purpose, let some fresh stable dung and rich compost be engaged beforehand. Some gardeners make their beds on the level ground, but it is always safest to make a pit from eighteen inches to two feet deep ; in order to do this, a heap of dung should be deposited on the ground intended for the beds before the frost sets in ; by this means the ground will be preserved from frost, and good earth may be obtained from the pits without any difficulty.

The fresh dung should be spread regularly in the pits to the depth of twenty to twenty four inches ; as soon as the dung begins to heat, cover it with six or eight inches deep of mould ; then lay on the sashes, and protect the beds from the inclemency of the weather. In two or three days the rank steam may pass off ; it will then be necessary to stir

the mould before the seeds be sown, to prevent the growth of young weeds that may be germinating ; then sow the seeds as equally as possible, reserving a small quantity of the warm mould to be sown or sifted over the seeds. The beds should be afterwards attended to as directed for Broccoli and Cauliflower. This description of a hot bed is intended expressly for the raising of spring Cabbage, Lettuce, Tomatoes, and such other plants as may be required for early planting. Beds made earlier in the season, or for forcing, will require a greater substance of manure.

OBSERVATIONS ON FORCING VEGETABLES.

Before I commenced preparing this edition for the press, I intended to have written largely on the subject of forcing fruits, as well as vegetables ; but when I considered my motto, and that I was writing for young gardeners, I concluded to occupy my pages in such a manner as to effect the greatest possible good, at the smallest expense. Of the several branches of Horticulture, some are of greater importance than others ; and as the products of the kitchen garden form important articles of food for the bulk of mankind, it should be our first care to treat largely on the subject of this most useful part of gardening. Next to this, is the cultivation of fruits, and the production of ornamental plants and flowers, each of which will be noticed as we proceed. As I stand pledged to offer some remarks on forcing, or rather forwarding vegetables by artificial means, I shall endeavor to confine my observations to such points as are of primary importance ; and

in order to convince my readers of the importance of my subject, I shall first endeavor to show the utility of an artificial climate suited to the various kinds of useful plants. In England, a regular succession of vegetables can be obtained from the natural ground in every month of the year, and their fruits, from the summer heat being moderate, are of longer continuance than with us, and yet they make gardening a science, and employ the elements, as well as the ingenuity of man, to the production of fruits and vegetables *out of the ordinary season*.

I shall not attempt to treat of the cultivation of Pine-Apples, Grapes, Cherries, or other fruits grown in forcing houses, nor would it be advisable with us to undertake to raise Cucumbers, Melons, &c. in frames throughout our severe winters; but it must be acknowledged, that the extreme heat of our summers are as detrimental to the cultivation of some of the most valuable kinds of fruits and vegetables, as the coldness of our winters, and for those reasons, artificial aid is more necessary here in the winter and spring of the year than in England. The inhabitants of that country may obtain a supply of the different varieties of Artichokes, Broad Beans, Borecole, Broccoli, Cauliflower, Kale, Lettuce, Radishes, Rhubarb, Spinach, Turnips, and Salads in general a great part of the year, and Cabbages, Coleworts, &c. the whole of the year, from their kitchen gardens, whereas, if we were to attempt to supply our markets with culinary vegetables at all times, in any thing like the abundance that they have them there, we must turn our attention to the protecting and forwarding, as well as the forcing system.

Before I proceed to show the method of forcing vegetables, it may be necessary for me to remind my readers, that in providing an artificial climate,

they should consider the nature of the plants they intend to cultivate, and endeavour to supply them with that which is best calculated to nourish and support them. I have, in another part of this work, endeavoured to show, that heat, light, air, and moisture, are each essential to vegetation, and that these should be supplied in a judicious manner, according to circumstances.

In the midst of our winters, which is the usual time for forcing in England, we are subject to north-west winds, which produce extreme freezing. Now, as we have not yet discovered how to make an artificial air, it will not be safe for the gardener to raise a bottom heat under any kind of vegetable, until such time as he can impart a tolerable share of salubrious air, as the heat without air will soon destroy the fruits of his labour. Perhaps the safest time to commence forcing in frames, is soon after the middle of February, and the early part of March. I before hinted, that the depth of heating materials must be regulated by the season of the year at which the work is commenced, and also to the purposes for which the hot beds are intended. Beds made for the purpose of raising half-hardy plants, or for procuring seedling plants late in the spring, may be made in the manner recommended for the common hot bed; but if substantial heat is required to be kept up, the beds must be so contrived as to admit of linings as the heat decreases; and the dung should undergo a regular process of preparation, according to the use it is intended for. Compost heaps should also be provided, in order to furnish suitable mould to the different kinds of plants; for this purpose, all the old hot bed dung and mould, leaves, tan, turf, sand and other light manures and decayed animal dung, should be collected together,

In some cases when a slight hot bed is recommended for forwarding hardy plants, if it should happen that a seedling cucumber bed be at liberty, it may answer every purpose for Radishes, Lettuce, or other hardy plants; or such a bed may be spawned for Mushrooms if required.

If the forcing be commenced before the coldest of the winter is past, great precaution must be used lest the plants should be injured by cold cutting winds, or destroyed by heat for want of air. To prevent the former accident, warm dung should be placed arround the frames, and the sashes should be covered with mats and boards every night. If full air cannot be admitted in the day time, the sashes must be slidden down to let off the steam, at the same time the mats may be laid over the aperture, to prevent the cold air entering to the plants.

If the bottom heat in a bed be too violent which is sometimes the case, means must be used to decrease it. This is generally effected by making holes in the bed with a stake sharpened at the end, or with a crow-bar; which holes should be filled up when the heat is sufficiently reduced. In lining hot beds if the heat is reduced in the body of the beds, holes may be carefully made to admit heat from the fresh linings, so as to enliven the heat of the bed.

A Fahrenheit Thermometer should be always at hand, at the time of forcing, to be used when necessary, to regulate the heat in the beds; and the water that is used in cultivating plants in frames, should be warmed to the temperature of the air, or according to the heat required for the various kinds of plants, which will be shown in the different articles, as we proceed.

FORCING ASPARAGUS IN HOT BEDS.

As Asparagus is apt to grow weak and slender by extreme bottom heat, it is forced with greater success, and with less trouble in flued pits, in a hot house than in dung hot beds, because the heat from tan is more regular; but a very suitable bed may be formed in a deep hot bed frame, made in the usual way. If dung alone or a mixture of dung and leaves be used, it should be in a state past heating violently before it is made into a bed; but if the gardener has no choice of materials, he may make his hot bed in the usual way, and if the depth of heating materials be two feet, he may lay on a foot of old hot bed dung, tan or any light compost, that will admit of the heat passing through it. It may be necessary to state further, that though too much bottom heat should be avoided; heat is necessary to the production of the vegetable in a moderate time, which is generally effected in a month or six weeks after the commencement of the operations. For the purpose of keeping up a regular heat, a lining of hot dung should be applied around the frame, and changed as occasion requires. Provide plants from two to four, or even six years old, trim their roots, and place them in rows on the beds; when one row is laid, strew a little mould among the roots, then proceed in the same way with one row after another, keeping them on a level, as the surface of the bed at first lay, till you have finished planting them; then lay among the buds and roots some fine vegetable, or other rich mould, working it in amongst them with your fingers, and cover the beds over about one inch thick, and above that lay three inches in depth of vegetable mould not very rotten, old tan, or any other light compost that will admit the water to run quickly through. If there be a strong heat in the bed, slide down the sashes till it begins

to decline. The temperature at night should never be under 50, and it may rise to 65 without injury ; as the buds begin to appear, as much air must be daily admitted as the weather will permit. In two or three days after the beds are planted, the heat will begin to rise ; the beds should then have a moderate supply of water applied from a watering pot, with the rose on, repeat such waterings every three or four days. By the time the buds have come up three inches above the surface, they are fit to gather for use, as they will then be six or seven inches in length. In gathering them, draw aside a little of the mould, slip down the finger and thumb, twist them off from the crown ; this is a better method than to cut them ; at least it is less dangerous to the rising buds, which come up thick in succession.— An ordinary sized frame calculated for three sashes will hold from three hundred to five hundred plants according to the age and size, and will if properly managed yield a dish every day for about three weeks. On the above estimate if a constant succession of *Asparagus* be required, it will be necessary to plant a bed every eighteen or twenty days.

Rhubarb and Sea Kale, may be, and sometimes are forced in the same manner as *Asparagus* ; but the most general mode is to excite them where they stand in the open garden, by the application of warm dung, as directed in the articles page 60 and 65. Or roots of Rhubarb may be taken up in autumn and packed in sand deposited in a warm cellar ; and they will produce stalks fit for use in the spring, and if packed in boxes placed in a moderate hot bed in March, they will yield abundantly.

FORWARDING BROAD BEANS, OR (ENGLISH DWARFS.)

In the article, broad Bean, *vicia faba*, page 20, I have urged the necessity of early planting, in order that a full crop may be insured before the approach of warm weather; but as the ground is often frozen at the time that they ought to be planted, some of the best kinds may be planted in boxes and placed in a moderate hot bed in February, or early in March; If the plants thus raised be not nursed too tender, they may be transplanted into the open ground the latter end of March; this will enable them to produce their fruit early in June. Or if a heap of manure be spread thick on a piece of ground late in the autumn, it will keep the earth from freezing, and if this manure be removed in February, and a frame placed over and protected from extreme cold, the seedlings may be raised therein; and transplanted as before directed.

 FORCING KIDNEY BEANS.

The most dwarfish kinds of Kidney Beans may be raised in hot beds; but they require a substantial heat to mature them. The temperature within the frame should be kept up to 60, and may rise to 70 or 75°, provided the steam is let off. In order to insure sufficient heat to bring them into a bearing state, the plants may be first raised in small pots plunged into a hot bed, or, a small bed may be prepared earthed over with light rich compost six inches deep; and the beans planted therein and covered one inch. The second hot bed should be earthed over to the depth of eight or nine inches; and the beans transplanted as soon as they are two or three inches

high, in cross rows twelve or fifteen inches apart by three or four inches in the rows, or in clumps a foot apart. When the season is so far advanced that one bed with the help of linings will bring the plants well into fruit, the seed may be planted at once to remain for podding; or if the gardener should choose to mature his crop in the open ground he may raise his plants in boxes or pots in the month of April, and plant them out in a warm border early in May. Beans raised in hot beds, will require considerable attention;—cover the glasses every night with mats and boards; admit fresh air every mild day, give occasional gentle waterings, and earth them up carefully as they progress in growth, to strengthen them.

FORWARDING BROCCOLI AND CAULIFLOWER.

In treating of the method of cultivating this family of plants, in the articles, page 26 and 29, I recommended that an artificial climate be provided for them, so as to induce them to arrive at full perfection in the winter and early part of the spring. Such gardeners as may have provided frames for the purpose of making hot beds in the spring, may make use of them through the winter, in protecting Broccoli and Cauliflower; and as the frames will not be wanted until the severity of the winter is past, such plants as may be left at that season, may be protected by a covering of boards, straw, or litter, as occasion may require.

If Cauliflower be required early in the summer, the plants raised in the preceding autumn should be transplanted from the beds into the open ground in the month of March, and be protected by hand

glasses. This would insure their heading before the approach of *extreme warm weather*, which is very injurious to Cauliflower.

FORCING AND FORWARDING CUCUMBERS.

To produce Cucumbers at an early season, should be an object of emulation with every gardener. The business of forcing them should commence about eight or ten weeks before the fruit is desired, and a succession of plants should be raised to provide for accidents. Some choose the short prickly, others, the green cluster and southgate ; and seed that is two or three years old, is generally preferred, as it is not so apt to run to vines. The seed is generally sown in pots or boxes of light rich mould, and placed in a hot bed ; and some sow the seeds in the earth of a small bed prepared for the purpose. In either case, as soon as the plants have fully expanded their two seed leaves, they may be transplanted into pots ; put three plants in each pot ; when this is done, apply water warmed to the heat of the bed, and shut down the glasses, keeping them a little shaded by throwing a mat over the glass, till the plants have taken root. When they are about a month old, they will be fit to transplant into the fruiting bed.

Well preparing the dung, is of the greatest importance in forcing the Cucumber, and if not done before it is made into a bed, it cannot be done after, as it requires turning and managing to cause it to ferment freely and sweetly. Fresh dung from the stable should be laid into a heap, turned three times, and well mixed with a fork ; if any appears dry, it should be made wet, always keeping it between the

two extremes of wet and dry, that the whole may have a regular fermentation. A dry situation should be chosen for the beds to be formed on, so that no water can settle under the dung. The substance of dung from the bottom of the bed should be from three to four feet, according to the season of planting, and the moulding should be done as soon as the bed is settled, and has a lively regular tempered heat. Lay the earth evenly over the dung, about six inches deep; after it has lain a few days, examine it, and if no traces of a burning effect are discovered, by the mould turning of a whitish colour, and caking, it will be fit to receive the plants; but if the earth appears burnt, or of a rank smell, some fresh sweet mould should be provided for the hills, and placed in the frame to get warm, at the same time, vacancies should be made to give vent to the steam, by running down stakes. After the situation of the bed has been ascertained, and the heat regulated, the holes should be closed, and the earth formed into hills; raise one hill in the centre under each sash, so that the earth is brought to within nine inches of the glass; in these hills, plant three seedlings, or turn out such as may be in pots, with the balls of earth about their roots, and thus insert one patch of three plants in the middle of each hill. The plants should be immediately watered with water heated to the air of the bed, and kept shaded till they have taken root.

The temperature should be kept up to 60° , and may rise to 80° without injury, providing the rank steam be allowed to pass off; therefore, as the heat begins to decline, timely linings of well prepared dung must be applied all round the frame; begin by lining the back part first; cut away the old dung perpendicularly by the frame, and form a bank two feet broad, to the height of a foot, against the back

of the frames ; as it sinks, add more ; renew the linings around the remainder of the bed as it becomes necessary, and be careful to let off the steam and give air to the plants at all opportunities. Give necessary waterings, mostly in the morning of a mild day, in early forcing ; and in the afternoon in the advanced season of hot sunny weather. Some use water impregnated with sheep or pigeons' dung. As the roots begin to spread, and the vines to run, the hills should be enlarged, by gathering up the earth around them, and a supply of good mould should be furnished to gather up as required, for earthing around the plants.

When the plants have made one or two joints, stop them, after which they generally put forth two shoots, each of which let run till they have made one or two clear joints, and then stop them ; and afterwards continue throughout the season to stop them at every joint ; this will strengthen the plants, and promote their perfecting the fruit early.

The following artificial operation is recommended by Abercrombie, Phial, and other writers, as essential to the production of a full crop of cucumbers under glass. In plants more freely exposed to the open air, the impregnation is effected by nature. Those which some call false blossoms, are the male flowers, and are useful in this operation.

“The Cucumber” Abercrombie observes, “bears male and female blossoms distinctly on the same plant. The latter only produce the fruit, which appears first in miniature, close under the base, even before the flower expands. There is never any in the males ; but these are placed in the vicinity of the females, and are absolutely necessary, by the dispersion of their farina, to impregnate the female blossom ; the fruit of which will not otherwise swell to its full size, and the seeds will be abortive.

The early plants under glass, not having the full current of natural air, nor the assistance of bees and other winged insects to convey the farina, the artificial aid of the cultivator is necessary to effect the impregnation. At the time of fructification, watch the plants daily ; and as soon as the female flower and some male blossoms are fully expanded, proceed to set the fruit the same day, or next morning at farthest. Take off a male blossom ; detaching it with part of the footstalk. Hold this between the finger and thumb ; pull away the flower leaf close to the stamens and antheræ or central part, which apply close to the stigma or bosom of the female flower, twirling it a little about, to discharge thereon some particles of the fertilizing powder. Proceed thus to set every fruit, as the flowers of both sorts open, while of a lively full expansion ; and generally perform it in the early part of the day, using a fresh male, if possible, for each impregnation, as the males are usually more abundant than the female blossoms. In consequence the young fruit will soon be observed to swell freely. Cucumbers attain the proper size for gathering in about fifteen, eighteen, or twenty days after the time of setting ; and often in succession for two or three months or more, in the same beds, by good culture."

FORWARDING CUCUMBERS UNDER HAND GLASSES.

If it be desired to have Cucumbers in the open garden at an early season, the plants may be raised in pots as before directed, and planted in a warm border either in the earth, or in hot bed ridges. A hand glass should be provided for each hill, which should be kept close down every night,

and in cool days, taking care to admit air when practicable. The plants may be hardened by degrees by taking off the glass in the heat of the day, and as the weather gets warm they may be left to nature.

FORWARDING MELONS UNDER HAND GLASSES.

Although our citizens have an opportunity of procuring the Melon, without artificial aid, as their continuance is short, it may not be amiss to remind the gardener that the directions above given for maturing Cucumbers under glass will apply to melons, with very few exceptions; care however must be taken that they be kept away from each other at the time of fruiting, as instances often occur of whole crops being entirely ruined, by plants of the same genus being raised too near each other. Those who may wish to forward Melons may prepare a hot bed in March or April, to raise plants in; the bed may be formed and the plants managed in precisely the same manner as is directed for cucumbers. If the ridging system be adopted, and a hand glass applied to each hill, Melons may be obtained one month earlier than the usual time. Gardeners raising Melons for the supply of city markets may gratify the public, by pursuing the forwarding, if not the forcing system. Ridges may be prepared in the following manner. In April or May, a trench may be dug in a warm border about two feet deep and three wide, and of sufficient length for as many hand glasses as are intended to be employed, allowing three feet for every hill. Some good heating manure should be laid in the pits, managed the same as a common hot bed; to this must be added

good rich mould to the depth of eight or ten inches for the plants to grow in ; as soon as the mould is warm the seedlings may be planted three plants in each hill, after which the hand glasses should be set on and shaded. After the plants have taken root and began to grow, the glasses should be raised in fine days and propped up so as to admit fresh air, and as the warm weather progresses, they may be taken off in the middle of fine days, so as to harden the plants gradually to the weather ; and by the latter end of May they may be left to nature.

Melons or Cucumbers may be perpetuated from layers or cuttings of the early plants, if required.

FORCING PEAS IN HOT BEDS.

The best sort of Peas to force, are the most dwarfish kinds, and the seed is better for being two or three years old, as they will bear earlier and make less straw. The true early frame Pea, is generally preferred, but Bishop's new early Pea is very dwarfish and prolific, and therefore suitable for forcing. Peas become more prolific and run less to vine by being transplanted, than when they are sown where they are to remain ; the plants may be raised in a gentle hot bed, either in the earth of the bed, or in pots or boxes. Peas do not require excessive heat ; the temperature must be progressive ; beginning at about 50° for the nursery bed, and from that to 60 or 65 for fruiting. When the leaves of the plants are fairly expanded they may be transplanted in rows from twelve to eighteen inches apart ; observe the earth in the fruiting bed should be from twelve to eighteen inches in depth. As the Peas progress in growth the earth should be

stirred, and when six inches high, small sticks may be applied so that the tendrils of the Peas may easily take hold ; and they should be moulded at the bottom to enable them to support themselves. When they appear in blossom, nip the top off; this greatly promotes the forming and filling of the pods ; they will require to be regularly watered, and as the spring advances they may be exposed to the weather, taking care to shelter them in the event of a sudden change.

FORCING POTATOES IN HOT BEDS.

Potatoes may be forced in a great variety of ways. Those who attempt to mature Potatoes in frames, will of course provide such of the earliest kinds as are not inclined to produce large tops, the Broughton dwarf, early mule, and the oak, and the ash leaved, are of this description. Potatoes may be forwarded in growth previous to their being planted in the beds by placing them in a warm damp cellar. Some forward them in pots or boxes, and afterwards mature them in a hot bed ; others plant them in the bed at once, in which case the bed should be moulded from fifteen to twenty inches deep, and the heating materials should be sufficient to keep up a moderate heat for two or three months. Perhaps the most convenient way to force Potatoes in this climate is to provide pots for the purpose ; plant one set in each pot in January, set them in a warm cellar till a bed can be prepared in February, in this set in the pots. While the tuberous roots are forming and before they fill the pots, prepare the beds for maturing them, and then bury them in the mould with the balls of earth attached to them.

The beds should be kept free from frost, and air should be given at every opportunity. The common round Potato may be forwarded, by laying them thick together in a slight hot bed in March, and when they are planted in the borders, a quantity of comb-makers' shavings may be deposited in each hill, this will greatly promote their growth. For forwarding Sweet Potatoes, see the article page 56.

FORWARDING RADISHES, &c.

Radishes may be obtained early in the spring by means of a moderate hot bed. The earth in the frame should be a foot in depth, and air should be admitted every day after they are up, or they will incline more to tops than roots. If they come up too thick, they should be thinned to between one and two inches apart. Give gentle waterings as occasion requires, and keep them well covered in cold nights. For raising early Radishes on ground not accommodated with frames, a hot bed may be made and arched over with hoop bends or pliant rods, which should be covered with mats constantly at night, and during the day in very cold weather. In moderate days, turn up the mats at the warmest side; and on a fine mild day, take them wholly off, and harden them gradually to the weather. Turnips, Carrots, Onions, or any kind of Salads, or pot Herbs may be raised in the same way by sowing the seed in drills, and keeping the ground clear of weeds.

The following simple method of forcing vegetables on a small scale, is recommended by a correspondent of the London Magazine for June, 1828:

“Mushrooms in winter I obtain by a very simple though not a new process. Provide boxes three feet long, and one foot eight inches deep ; a quantity of horse droppings, perfectly dry ; some spawn and some light dry soil. Fill the boxes by layers of droppings, spawn, and soil, which must be trodden perfectly tight ; repeat these triple layers till the boxes are full, and all trodden firmly together.

“Four such boxes at work, are sufficient for a moderate demand ; and of a dozen, four brought on at a time, and placed upon the flue of a *greenhouse* stove, will produce a fine supply. The surface of these portable beds may be covered with a little hay, and occasionally, though sparingly, watered. It is not absolutely necessary that they be set on the flue of a hot house : the *kitchen cupboard*, or any other similar place, will suit equally well. This plan is also convenient for affording a plentiful stock of superior spawn.

“The same sized boxes will also do for *Asparagus* ; but for this purpose a sufficient stock of three year old plants must be at hand ; also eighteen boxes, four of which are the necessary set to be forced at one time for a middling family. Half fill the boxes with decayed tanners’ bark, leaf mould, or any other similar mould ; on this, pack in the roots as thickly as possible, and fill up the boxes with the bark, &c. Any place in a forcing house will suit them ; on the flue under the stage, or in short, any place where they can enjoy the necessary degree of heat. Besides *Asparagus* and *Mushrooms*, *Sea Kale*, *Rhubarb*, *Buda Kale*, *Angelica*, *Small Salad*, as also other pot herbs, may be raised in the same manner.”

Those who have not the conveniences recommended in a greenhouse, &c., may place the boxes in a hot bed. The glasses being laid on and the

beds covered at nights, will soon promote the growth of the plants, and produce vegetable luxuries at a season when garden products in general are comparatively scarce.

It is unnecessary to show of how much value such processes may be in minor establishments, or in a young country. I wish it to be understood, that in order to the successful cultivation of some of the rare vegetables I have treated of, great pains must be taken in every stage of their growth. If the advice I have given be attended to, I flatter myself we shall soon obtain a supply of many of these luxuries of the garden. My directions are founded on the success attending the practice of some of the best gardeners in this country. I have had also sufficient experience to warrant me in this attempt to contribute my mite towards the "attainment of this kind of useful knowledge."

MUSHROOM. CHAMPIGNON COMESTIBLE. *Agaricus campestris*.

The *Agaricus* is said to be the most extensive genus in the vegetable kingdom. The species are determined upon various principles. As some of the kinds are poisonous, it is necessary to describe the eatable Mushroom. Loudon says, it is most readily distinguished when of a middle size, by its fine pink or flesh-coloured gills, and pleasant smell. In a more advanced stage, the gills become of a chocolate colour, and it is then more apt to be confounded with other kinds of a dubious quality; but that species which most nearly resembles it, is slimy to the touch, and destitute of the fine odour, having rather a disagreeable smell. Again: the noxious

kind grows in woods, or on the skirts of woods, while the true Mushroom springs up chiefly in open pastures, and should be gathered only in such places. Unwholesome fungi will sometimes spring up on artificial beds in gardens; thus, when the spawn begins to run, a spurious breed are often found to precede a crop of genuine mushrooms. The baneful quality of the toad-stool, *Agaricus virosus*, is, in general, indicated by a sickly nauseous smell, though some hurtful sorts are so far without any thing disagreeable in the smell, as to make any criterion, drawn from that alone, very unsafe. The wholesome kinds, however, invariably emit a grateful rich scent. The *Agaricus campestris* is most generally cultivated. Dr. Withering mentions other eatable varieties, which run considerably larger, but which are inferior in flavour; he says, "that a plant of the variety Georgia, was gathered in an old hot bed at Birmingham, which weighed fourteen pounds, and Mr. Stackhouse found one fifty-four inches in circumference, having a stem as thick as a man's wrist." Mushrooms may be obtained at any season of the year, by a proper regulation of the time and manner of forming the beds. A good crop is sometimes collected without making a bed on purpose, by introducing lumps of spawn into the top mould in old hot beds.

The methods of procuring and propagating spawn and of forming Mushroom beds are numerous. Indigenous spawn may be collected in pasture lands in September and October, or it may be found in its strength and purity in the paths of mills worked by horses, or in any other horse-walks under shelter; it is frequently to be found in old hot beds and dung-hills, in the summer season, and mushrooms of good quality may often be seen beginning to form themselves on the surface, like large peas; when

these are observed, it is time to take out the spawn, which is generally in hard dry lumps of dung, the spawn having the appearance of whitish coarse pieces of thread. The true sort has exactly the smell of a Mushroom. If spawn thus collected be required for immediate use, it may be planted in the beds at once, or it will keep three or four years, if laid to dry with the earth adhering to it, and afterwards placed in a warm dry shed, where there is a current of air ; but if it be not completely dried, the spawn will exhaust itself or perish, as it will not bear the extremes of heat, cold, or moisture.

Such of my readers as may have hitherto been unacquainted with the cultivation of the Mushroom, must perceive, from the preceding remarks, that a Mushroom bed is simply a heap of animal dung and earth, so tempered as to be capable of producing and preserving spawn ; but in order to have fruitful spawn at all times, it should be so formed as to be always at command. To this end, a quantity of fresh horse droppings mixed with short litter, should be collected ; add to this one third of cow dung, and a small portion of earth, to cement it together ; mash the whole into a thin compost, like grafting clay ; then form it in the shape of bricks, which being done, set them on edge, and frequently turn them until half dry ; then with a dibble make one or two holes in each brick, and insert in each hole a piece of spawn the size of an egg ; the bricks should then be laid where they can dry gradually. When dry, lay dry horse dung on a level floor, six or eight inches thick ; on this, pile the bricks the spawn side uppermost. When the pile is snugly formed, cover it with a small portion of warm fresh horse-dung, sufficient in quantity to diffuse a gentle glow throughout the whole. When the spawn has spread itself through every part of

the bricks, the process is ended, and they may be laid up into any dry place for use. Mushroom spawn, made according to this receipt, will preserve its vegetable powers for many years, if well dried before it is laid up : if moist, it will grow, and soon exhaust itself.

Mushroom beds are often formed in ridges in the open air, covered with litter and mats, so as to prevent heavy rains exciting a fermentation ; and sometimes in ridges of the same sort under cover, as in the open sheds of hot houses. They are also made in close sheds behind hot houses, or in houses built on purpose, called Mushroom houses. A moderately warm light cellar is peculiarly suited for the purpose in the winter season, as no fire is necessary, and but little water, the application of which so frequently proves injurious, when not judiciously managed. Mushrooms may be also raised in pots, boxes, hampers, &c., placed in warm situations ; in old hot beds, in pits with glass frames, and in dark frames or pits.

The general way of making Mushroom beds, is to prepare a body of stable dung, moderately fermented, to the thickness of about a yard, more or less, according to the size and situation in which the bed is to be formed ; when the strong heat has subsided, an inch of good mould may be laid over, and the spawn planted therein in rows five or six inches apart ; after this is done, another layer of mould, an inch thick, may be applied, and then a coat of straw. Beds well constructed, will produce Mushrooms in five or six weeks, and will continue to produce for several months, if care be taken, in gathering, not to destroy the young ones. As Mushrooms are gathered, from time to time, the straw should be spread carefully over the bed.

Beds made in a convenient place where there is space all around, may be formed so as to make four sloping surfaces, similar to the roof of a house ; this by being spawned on the four sides will yield abundantly. The celebrated Mr. Nicol makes his beds without spawn. The following are his directions, taken from Loudon's *Encyclopædia of gardening*.

"After having laid a floor of ashes, stone chips, gravel, or brick bats, so as to keep the bed quite dry, and free from under damp, lay a course of horse-droppings six inches thick. These should be new from the stables and must not be broken, and the drier the better. They may be collected every day until the whole floor or sole be covered to the above thickness ; but they must not be allowed to ferment or heat. In the whole process of making up, the bed should be as much exposed to the air as possible ; and it should be carefully defended from wet, if out of doors. When this course is quite dry, and judged to be past a state of fermentation, cover it the thickness of two inches with light dry earth ; if sandy so much the better. It is immaterial whether it be rich or not : the only use of earth here being for the spawn to run and mass in. Now lay another course of droppings, and earth them over as above, when past a state of fermentation : then a third course, which in like manner earth over. This finishes the bed, which will be a very strong and productive one if properly managed afterwards. Observe, that in forming the bed it should be a little rounded, in order that the centre may not be more wet or moist than the sides. This may be done in forming the sole or floor at first, and the bed would then be of equal strength in all parts. If it be made up against a wall in a cellar, stable, or shed, it may have a slope of a few inches from the back to the front, less or more, according to its breadth.

I have sometimes been contented with two courses as above, instead of three ; and often when materials were scarce, have made them up slighter, thus : three four inch courses of droppings with one inch of earth between each, and a two inch covering at top. Such a bed as this I have had produce for ten or twelve months together ; but very much depends on the state of the materials, and on the care taken in making it up ; also on the after management. The droppings of hard-fed horses only are useful. Those of horses kept on green food will, of themselves produce few or no mushrooms. I have made up beds from farm horses, fed partly on hard and partly on green food, and from carriage or saddle horses, fed entirely on corn and hay ; treated them in the same way in every respect ; and have found not once, but always, those made from the latter most productive. Droppings from hard fed horses may be procured at the public stables in towns, or at inns in the country, any time of the year ; and if the supply be plentiful, a bed of considerable dimensions may be made and finished within five or six weeks. In as many more weeks, if in a stable or dry cellar, or a flued shed, it will begin to produce, and often sooner ; but if the situation of the bed be cold, it will sometimes be two or three months in producing Mushrooms."

It may be necessary to state further, that extremes of heat, cold, drought and moisture, should be avoided in the cultivation of Mushrooms. If the temperature keeps up to 50° in the winter, beds will be safe, and the heat in the beds may rise to 60 or even 70° without injury. Air also must be admitted in proportion to the heat, and 60° should be aimed at as a medium temperature. Water given a little at a time, is better than too much at once after the spawn has begun to spread ; and the water for this

purpose should always be made blood warm. A light covering of straw may be always used to preserve moisture on the surface; and if the beds be made in open frames, or otherwise subject to exposure, the straw may be laid thicker than on beds made in a cellar. Should beds fail in producing Mushrooms, after having been kept over hot or wet, it may be inferred that the spawn is injured or destroyed; but if on the contrary a bed that has been kept moderately warm and dry, should happen to be unproductive, such bed may be well replenished with warm water, and a coat of warm dung may be laid over the whole; if this does not enliven the bed after having lain a month, take off the earth, and if on examination there is no appearance of spawn, the whole may be destroyed, but if on the contrary the bed should contain spawn, it may be renovated by covering it again, especially if any small tubercles be discernable, but if the heat should have declined, the spawn may be taken out and used in a fresh bed. If beds be formed in hot bed frames, under glass, some mats or straw must be laid over the glass to break off the intense heat of the sun.

Although only one species of edible fungi has yet been introduced to the garden, there are several eatable kinds. In Poland and Russia there are above thirty sorts in common use among the peasantry. They are gathered at different stages of their growth, and used in various ways; raw, boiled, stewed, roasted, and being hung up and dried in their stoves and chimneys, form a part of their winter stock of provisions. Great caution is necessary in selecting any species of this tribe for food, and none but the Botanist should search for any but the sort we have described. Physicians say, that all the edible species should be thoroughly masticated be-

fore taken into the stomach, as this greatly lessens the effects of poisons. When accidents of the sort happen, vomiting should be immediately excited, and then the vegetable acids should be given, either vinegar, lemon juice, or that of apples; after which, give ether and antispasmodic remedies, to stop the excessive bilious vomiting. Infusions of gallnut, oak bark, and Peruvian bark are recommended as capable of neutralizing the poisonous principle of Mushrooms. It is, however, the safest way not to eat any but the well known kinds, until they have been soaked in vinegar. Spirits of wine and vinegar are calculated to extract some part of their poison.

FLOWER GARDEN.

Previous to forming a Flower Garden, the ground should be made mellow and rich, by being well pulverized, manured, and prepared in every respect as directed for the Kitchen Garden. A Flower Garden should be protected from cold cutting winds by close fences, or plantations of shrubs, forming a close and compact hedge, which should be neatly trimmed every year. Generally speaking, a Flower Garden should not be upon a large scale; the beds or borders should in no part of them be broader than the cultivator can reach to, without treading on them: the shape and number of the beds must be determined by the size of the ground, and the taste of the person laying out the garden. Much of the beauty of a pleasure garden depends on the manner in which it is laid out; a great variety of figures may be indulged in for the Flower bed. Some choose oval or circular forms, others squares, trian-

gles, hearts, diamonds, &c., and intersected winding gravel walks.

Neatness should be the prevailing characteristic of a Flower Garden, and it should be so situated as to form an ornamental appendage to the house ; and where circumstances will admit, placed before windows exposed to a southern or south-eastern aspect. The principle on which it is laid out, ought to be that of exhibiting a variety of colour and form, so blended as to present one beautiful whole. In a small Flower Garden, viewed from the windows of a house, this effect is best produced by beds, or borders formed on the side of each other, and parallel to the windows from whence they are seen, as by that position the colours show themselves to the best advantage. In a retired part of the garden, a rustic seat may be formed, over and around which honey-suckles and other sweet and ornamental creepers and climbers may be trained on trellises, so as to afford a pleasant retirement.

Although the greatest display is produced by a general flower garden, that is, by cultivating such a variety of sorts in one bed or border as may nearly insure a constant blooming, yet bulbous plants, while essential to the perfection of the Flower Garden, lose something of their peculiar beauty when not cultivated by themselves. The extensive variety of bulbous roots furnish means for the formation of a garden, the beauty of which arising from an intermixture of every variety of form and colour, would well repay the trouble of cultivation, particularly as by a judicious selection and management, a succession of bloom may be kept up for some length of time. As, however, bulbous flowers lose their richest tints about the time that annuals begin to display their beauty, there can be no well founded objection to the latter being transplanted into the

bulbous beds, so that the opening blossoms of the annuals may fill the place of those just withered, and continue to supply the flower beds with all the gaiety and splendour of the floral kingdom.

But the taste of the florist will be exercised to little purpose, in his selection of flowers, if he does not pay strict attention to the general state of his garden. If there are lawns or grass walks, they should be frequently trimmed, and more frequently mowed and rolled, to prevent the grass from interfering with the flower beds, and to give the whole a neat regular carpet-like appearance. If there are gravel walks, they should be frequently cleaned, replenished with fresh gravel, and rolled. Box and other edgings should be kept clear of weeds, and neatly trimmed every spring. Decayed plants should be removed, and replaced with vigorous ones from the nursery bed. Tall flowering plants must be supported by neat poles or rods; and all dead stalks and leaves from decayed flowers, must be frequently removed.

In the summer season, all kinds of insects must be timely destroyed, and in the evening of warm days, the flowers will require frequent watering.

FLOWERS.

Whate'er has beauty, worth, or power,
Or grace, or lustre, is a flower;
Wit is a flower; and bards prepare
The flowers of fancy for the fair;
Deep in the bosom dwells a flower,
Not time shall taint, nor death devour;
A Flower that no rude season fears,
And VIRTUE is the fruit it bears.

A CATALOGUE OF ANNUAL FLOWER SEEDS.

Graines de fleurs annuelles.

- Alkekengi or Kite flower, *Atropa physaloides*.
 Alyssum Sweet, *Alyssum maritimum*.
 § Amaranthus, three coloured, *Amaranthus tricolor*.
 Amethyst, blue, *Amethystea cerulea*.
 § Balsamines of various colours, *Impatiens balsamina*.
 Bladder ketmia, *Hibiscus trionum*.
 Blue bottle, great, *Centaurea cyanus major*.
 Blue bottle, small, *cyanus minor*.
 § Browallia (blue and white,) *Browallia elata*.
 § Cacalia, scarlet, *Cacalia coccinea*.
 Candytuft, white and purple, *Iberis alba and purpurea*.
 Do. sweet scented, *odorata*.
 Catch-fly, *Silene armeria*.
 § Centaurea, great American, *Centaurea Americana*.
 China asters of various kinds and colours, *Aster sinensis*.
 Chrysanthemum, white, yellow, and tri-coloured, *Chrysanthemum coronarium*.
 § Cockscomb, crimson and yellow, *Celoeia cristata*.
 * Convolvulus, dwarf, *Convolvulus minor*.
 Coreopsis, Golden, *Coreopsis tinctoria*.
 Coreopsis, elegant, *Coreopsis grande flora*.
 Cuckold's Horn, (two stamined, *Martynia diandria*.
 Devil in a bush, or Love in a mist, *Nigella damascena*.

Dew Plant,	<i>Mesembryanthemum glabrum.</i>
* Evening primrose,	<i>Oenothera grandiflora.</i>
Eternal flower, yellow,	<i>Xeranthemum lucidum.</i>
Do. purple,	<i>anuum.</i>
Euphorbia, variegated,	<i>Euphorbia variegata.</i>
Feather, grass,	<i>Stipa pinnata.</i>
Flos adonis,	<i>Adonis miniata.</i>
§ Globe Amaranthus,	
purple, white, and	
striped,	<i>Gomphrena globosa.</i>
Hawkweed, yellow,	<i>Crepis barbata aurantia.</i>
Do. red,	<i>rubra.</i>
* Hedge Hogs,	<i>Medicago intertexta.</i>
§ Ice plant,	<i>Mesembryanthemum chrys-</i> <i>tallinum.</i>
Jacoea or Groundsell,	
purple and white,	<i>Senecio elegans and alba.</i>
Job's Tears,	<i>Coix lachryma Jobi.</i>
Larkspur, broad leaved,	<i>Delphinium peregrinum.</i>
Do. branching and	
upright,	<i>consolidum.</i>
La atera, European,	<i>Lavatera trimestris.</i>
Love lies bleeding,	<i>Amaranthus melancholicus.</i>
* Lupins of various co-	
lours,	<i>Lapinus var.</i>
Marigold, African,	<i>Tagetes erecta.</i>
Do. French,	<i>patula.</i>
Marigold, starry,	<i>Calendula stellata.</i>
* Marvel of Peru, (or 4	
o'clock,) <i>Mirabilis jalapa.</i>	
* Mignonette, (sweet	
scented,) <i>Reseda odorata.</i>	
Nolana, trailing,	<i>Nolana prostrata.</i>
* Oats, animated,	<i>Avena sensitiva.</i>
Pansy or Heart's Ease,	<i>Viola tricolor,</i>
* Poppy, horned,	<i>Glaucum luteum.</i>

- * Poppy, officinal white, *Papaver somniferum*.
 Pentapetes, scarlet, *Pentapetes Phœnica*.
 Prince's feather, *Amaranthus hypocondriacus*.
 § Sensitive plant, *Mimosa sensitiva*.
 Strawberry Spinach, *Blitum capitatum*.
 Sunflower, tall and dwarf, *Helianthus annuus*.
 Sweet Sultan, purple,
 white, and yellow, *Centaurea var.*
 * Stock Ten Week, or
 gilliflower, various co-
 lours, *Cheiranthus annuus*.
 'Touch me not, *Noli me tangere*.
 Trefoil, crimson, *Trifolium incarnatum*.
 Do. sweet scented, *odorata*.
 * Venus' looking-glass, *Campanula speculum*.
 Venus' navel wort, *Cotyledon macrophyllum*.
 Ximenisia, Mexican, *Ximenisia ensaloides*.
 Zinnia, red and yellow, *Zinnia, rubra and lutea*.

The following are climbing plants, and will require to be planted in situations where they can be supported by sticks or twine, without interfering with other plants.

- Balloon vine, or love in a
 puff, *Cardiospermum*.
 § Cypress vine, *Ipomoea coccinea*.
 Fumitory pink, *Fumaria fungosa*.
 Hyacinth Bean, *Dilochos, purpurea & alba*.
 Morning Glory, various
 colours, *Convolvulus major*.
 Balsam Apple and Pear, *Momordica balsamina*.
 Gourd, the bottle, *Cucurbita lagenaria*.
 Do. two coloured, *bicolor*.
 Do. orange, *aurantia*.
 Snake Melon, *Cucumis melo anguinus*.
 Sweet Peas of various
 kinds and colours, *Lathyrus odoratus*.

All kinds of annual Flower seeds may be sown in the month of April and May, on borders or beds of clean light earth, which should be previously manured with rich compost or old dung. This being incorporated well with the soil, the beds should be levelled, and the seeds sown either in small patches, each kind by itself, or in drills from 1-4 to 1-2 an inch deep, according to the size or nature of the seed. Those who would have their plants to flower early, should sow the hardy kinds the last week in March, or early in April, the most tender (which are marked §) may be sown in boxes or pots of light earth at the same time. These, if exposed to the sun every day, and sheltered in cold nights, will be forwarded in growth, and be fit to transplant early in June. Those marked *, may also be sown in small pots. As these plants do not well bear transplanting, they should be turned out of the pots with the balls of earth entire, and placed in the ground where they are intended to flower; or if the seed be sown in a bed with other kinds, they should be carefully transplanted with a trowel, without disturbing the roots. The most eligible way to obtain early flowers, is to prepare a slight hot bed for the tender kinds, and either to plunge the pots therein up to their brims, or to sow the seed in the earth in shallow drills not more than a quarter of an inch deep.

To prevent disappointment, I would recommend that great care be taken to keep the seed beds as clear from weeds as possible. It cannot be denied but young plants are apt to get smothered and sometimes pulled up with weeds. To obviate this, I would suggest that the seeds be sown in shallow drills, each kind by itself, and that an account be kept of the contents of each drill in a book; also of all seeds that are sown at different times, and by be-

ing particular in the dates, you may always know when to expect your plants to come up. In order that this may be rendered plain to my readers, I adopt the following plan of entry of six kinds sown in pots, and six in the open ground :

April 20, sowed flower seeds in pots.

Pot marked A, or 1, *Amaranthus tricolor*.

B, or 2, *Balsamines*.

C, or 3, *Cockscomb, crimson*.

D, or 4, *Egg Plant*.

E, or 5, *Ice Plant*.

F, or 6, *Mignonette*.

These pots may be either marked with letters or figures on the outside, to answer with the book, or notches may be cut in wood, or other labels affixed to the pots, and entered accordingly.

April 20, sowed flower seeds in drills, as under :

No. 1, *Bladder ketmia*.

2, *Coreopsis tinctoria*.

3, *Yellow eternal flower*.

4, *Globe amaranthus*.

5, *Prince's feather*.

6, *Larkspur branching*.

If these numbers be continued to 100, or even 1000, there can be no mistake, provided the rows are all marked according to the entry in the book ; or if No. 1 be noted, plain sticks will answer afterwards, if one be stuck at each end of every row. In this case, it would be well to leave a space every ten or twenty rows, and note the number of the rows ; by this means, they can be the more easily traced.

If the book be kept by any other than the Gardener, each bag or paper of seed should be marked or numbered according the entry in the book, and

given to the Gardener, with directions to sow them in the regular order.

BIENNIAL AND PERENNIAL FLOWER SEEDS.

Graines de fleurs bisannuelles et vivaces.

Those marked || are Biennials.

Adonis, spring flowering,	<i>Adonis vernalis.</i>
Alpine Columbine,	<i>Aquilegia alpina.</i>
Alyssum, yellow,	<i>Alyssum saxatile.</i>
Asiatic globe flower,	<i>Trollius Asiaticus.</i>
Bee Larkspur,	<i>Delphinium elatum.</i>
Canterbury Bells, (blue and white,)	<i>Campanula medium.</i>
Cardinal flower, scarlet,	<i>Lobelia cardinalis.</i>
Cassia, Maryland,	<i>Cassia Marylandica.</i>
Carnation, pink,	<i>Dianthus caryophyllus.</i>
Chinese, imperial pink,	<i>Chinensis.</i>
Clove, do.	<i>hortensis.</i>
Colutea, scarlet,	<i>Sutherlandia frutescens.</i>
Coreopsis Lanceolatum,	<i>Coreopsis lanceolatum.</i>
Coronet, flowered Lych- niss,	<i>Lychnis coronata.</i>
Clary, purple topped,	<i>Salvia sclara.</i>
Crimson Bergamot,	<i>Monarda Kalmiana.</i>
Columbine, double,	<i>Aquilegia vulgaris.</i>
Dragon's head,	<i>Dracocephalum.</i>
European globe flower,	<i>Trollius Europaeus.</i>
Eupatorium, blue,	<i>Eupatorium cerulea.</i>
Fox-glove, purple,	<i>Digitalis purpurea.</i>
Do. white,	<i>alba.</i>
Fraxanella, red,	<i>Dictamnus rubra.</i>
Gentian, purple,	<i>Gentiana saponaria.</i>

Gentian, Porcelain flow- ered,	<i>Gentiana adscendens.</i>
Gilliflower, many sorts,	<i>Cheiranthus incanus.</i>
Globe Thistle,	<i>Echinops sphærocephalus.</i>
Hollyhock, black Ant- werp,	<i>Althea fl. nigra.</i>
Do. China of sorts,	<i>Althea Chinensis var.</i>
Do. English do.	<i>Anglica var.</i>
Honesty, or Satin Flow- er,	<i>Lanaria biennis.</i>
Ivy Leaved Toad Flax,	<i>Linaria cymbalaria.</i>
Jacob's Ladder,	<i>Polemonium ceruleum.</i>
Liatris, long spiked,	<i>Liatris spicata.</i>
Lupin Perennial,	<i>Lupinus perennis.</i>
Lychnis, Dwarf Moun- tain,	<i>Lychnis Alpina.</i>
Do. scarlet,	<i>Chalcedonica.</i>
London Pride, or Maiden Pink,	<i>Dianthus deltoides.</i>
Monks'-hood,	<i>Aconitum napellus.</i>
Monkey-flower; blue,	<i>Mimulus ringens.</i>
Phlox, or French Lilac,	<i>Phlox, many species.</i>
Pink, pheasant-eyed,	<i>Dianthus plumarius.</i>
Perennial Campanula,	<i>Campanula persicifolia.</i>
Perennial Larkspur,	<i>Delphinium grandiflorum.</i>
Purple Perennial Flax,	<i>Linum perenne.</i>
Pyramidal Bell Flower,	<i>Campanula pyramidalis.</i>
Queen of the Meadows,	<i>Spiraea ulmaria.</i>
Rose Campion,	<i>Agrostemma coronaria.</i>
Rudbeckia, yellow and purple,	<i>Rudbeckia lutea and pur- purea.</i>
Sophora, white and blue,	<i>Sophora alba and cerulea.</i>
Sun Flower, perennial, many flowering,	<i>Helianthus altissimus.</i>
Sweet Scabious,	<i>Scabiosa atropurpurea.</i>
Sweet Rocket,	<i>Hesperis matronalis.</i>
Sweet William,	<i>Dianthus barbatus.</i>

Sweet Chili Marigold,	<i>Tagetes lucida.</i>
Valerian, Garden,	<i>Valeriana rubra.</i>
Valerian, Greek,	<i>Polemonium cerulea.</i>
Verbena, purple,	<i>Verbena purpurea.</i>
Veronica, variegated,	<i>Veronica variegata.</i>
Veronica, tall blue,	<i>Veronica elata cerulea.</i>
Wall Flower, bloody,	<i>Cheiranthus cheiri.</i>

(Climbing Plants.)

Ever-lasting Peas,	<i>Lathyrus latifolius.</i>
Purple Glycine,	<i>Glycine apios.</i>
Scarlet Trumpet Flower,	<i>Bignonia radicans.</i>
Sweet Virgin's Bower,	<i>Clematis flammula.</i>
Traveller's Joy,	<i>vitalba.</i>
Virginian Virgin's Bower,	<i>Virginiana.</i>

Biennial and perennial flower seeds may be sown in the month of April, in shallow drills. If this business be performed in the manner recommended for annuals, they can be easily distinguished from each other; and as these plants do not flower the first year, they may be thinned out, or removed from the seed beds as soon as they are well rooted, and planted either into different parts of the flower beds, or in a nursery bed. If the latter plan be adopted, they should be planted in rows a foot or more apart, and kept free from weeds by means of a small hoe, which will greatly promote their growth, and prepare them for transplanting into the ground, (where they are intended to flower,) either in the autumn or early in the ensuing spring. It may be remarked that biennials are raised principally from seed sown every year. They seldom survive the second winter to flower in perfection, unless they are renewed by cuttings of top shoots, young flower stalks, or casual root-offsets, layers, &c. It will be unnecessary to take this trouble unless it be with any

extraordinary double-flowering plants. Some of the perennials may be increased by root offsets detached from the old plants, and planted in Spring or Autumn; others by bottom suckers and slips of top shoots, layers, and pipings of young shoots, &c.

It may be necessary to state further; that there are a great variety of beautiful double flowering perennial herbaceous plants, that will not produce seed; many of these may be obtained of the Florists, and should be introduced into the regular flower beds; the mode of increasing such, is by layers, cuttings, offsets, &c. detached from the old plants. As the earth within the flower beds will need to be fresh dug and replenished with good compost or manure, once in two or three years, it may be necessary to take up all the perennial plants at such times. Such roots as may be overgrown, should be deprived of their surplus offsets, and may be planted in a nursery bed, or returned with the parent plants into the regular flower beds.

In removing plants into the beds where they are intended to flower, great pains should be taken to preserve some of the earth to the roots, and the ground should be previously brought into good condition, so that they may strike freely, and produce their flowers in perfection. The plants should be so arranged that they may all be seen. The most dwarfish may be placed in front, and others in a regular gradation to the tallest behind; or the tallest may be planted along the middle of the beds, and the others on each side according to their varied heights and colours.

There is no part of gardening which requires so much elegance of taste and fancy, as in setting off a border or bed of intermixed flowers to advantage. In assemblage with other flowers, the different kinds of hardy bulbs may be planted in small clumps of

six, seven, or eight inches in diameter, three, four, five or more roots in each, according to their size and growth, and these at suitable distances from one another. Likewise, observe to diversify the kinds and colours, so as to display when in bloom the greatest possible variety of shades and contrasts.

In my preliminary observations, I directed the attention of my readers to some important points respecting walks, edgings, &c.—although box is superior to any thing else for edgings; yet in extensive gardens, dwarf plants of various kinds may be used for such purpose. Thrift is the neatest small evergreen next to box; but Violets, Pinks, Perewinkle, Pansy, or even Parsley, Thyme, Strawberry plants, &c. may be used for the sake of diversity. These will require frequent watering and trimming, and the Thrift, &c. should be sometimes taken up, divided at the roots, and replanted. Box edgings will also require frequent pruning, and trimming; and once in from seven to ten years, the whole may be taken up, divided and replanted, and the surplus slips may be planted in a nursery bed in rows about a foot apart; these will be suitable for making edgings the year following.

Flower beds should be kept free from weeds, and watered occasionally in the summer. In the autumn they should be covered with straw or light litter; this should be taken off in the spring, and the ground should be hoed and dressed in such a manner as to enliven the earth around the roots of the plants, as also to give the whole a neat appearance.

Having already exceeded my limits, I must omit furnishing a Catalogue of Bulbous Flower roots. Messrs Thorburn & Sons, import all the various kinds every year from Holland. The following directions for their management are annexed to their catalogue:

GENERAL DIRECTIONS FOR THE CULTIVATION AND
MANAGEMENT OF BULBOUS ROOTS.

In no class of plants has nature so varied her delicate tints as in this. It would seem as if each change she was capable of forming, was included in the varying beauties of the Tulip. In some gardens in Holland, they cultivate, by distinct names, above eleven hundred varieties of Tulips, thirteen hundred of Hyacinths, and six hundred of Ranunculus and Anemones, some of which are sold as high as sixty dollars the single root; and it is mentioned in the travels of Mr. Dutens in that country in 1771, of his having seen ten thousand florins (\$4000) refused for a single Hyacinth.

Situation, &c.—A southern exposure, dry and airy, and sheltered from the north winds, is preferable for most bulbs, but Anemones and Ranunculus will do better in a situation with a southern aspect, and at the same time in some measure sheltered from the intense heat of noonday. Perhaps no class of flowers affords so many delights, and so richly repays us for each little care bestowed on them.

The proper compost for Hyacinths, Tulips, Crown Imperials, Iris, Ranunculus, Anemones, Crocuses, Colchicums, and most other bulbs, is as follows:

One third sand,† one third well rotted cow yard manure, and one third good garden mould. Let the beds thus formed be well pulverized to the depth of fifteen or eighteen inches, that the three component parts may be well mixed together; a fourth part of rotten wood or vegetable mould from a swamp may be added to the above, if convenient to be obtained, and will be at all times beneficial in giving additional lightness to the soil.

The beds should be raised from two to three inches above the level of the walks, which will give an opportunity for all superfluous moisture to run off; some sand (not gravel) strewed in the trenches made for the roots, both before and after placing them, would be of advantage.

On the approach of winter, it would be beneficial to spread the beds with tanner's bark, withered leaves, straw, or light rotten earth from the woods, such as is formed by the decay of leaves, to the depth of two or three inches, as it prevents any ill effects which a severe season might have on the roots; but it should be carefully raked off again early in the spring.

Time of Planting, &c.—For Hyacinths, Tulips, Crown Imperials, Lillies, Polyanthus, Narcissus, Double Narcissus, Jonquilles, Iris, Crocuses, Colchicums, Star of Bethlehems, Pæonies, Snowdrops, Snowflakes, Gladiolus, and most other hardy bulbs, the preferable seasons for planting are the months of November and December.

Polyanthus Narcissus is more delicate than Hyacinths and Tulips: when they are planted in the open ground, it is advisable to cover the beds with straw, leaves, &c. to the depth of six or seven inches, and uncover them about the middle of March.

The *Ranunculus* and *Anemone* are not so tender as is generally supposed; they may either be planted in October or November, in a warm situation; and be protected during winter by a covering of three or four inches of leaves or tanners' bark, or they may be kept in dry sand during the winter season, and be planted in March or April. To have a succession of flowers, a proportion may be planted in autumn, and the residue in the spring; and, if treated as above directed, very little care is necessary to have them flower in perfection.

The different species of *Amaryllis*, *Ixias*, *Ferraria*, *Tigrida* or Tiger Flower, Double Tuberoses, and most other delicate bulbs, may be planted during the months of November or December, in pots, when intended to be sheltered during winter, or they can be kept in dry sand until the month of May, (which is the preferable method,) and then be planted in the open ground, or in flower-pots, and exposed to the air when the weather is perfectly settled.

Lachenalias should be potted in August, in a light sandy soil, well enriched with vegetable mould, and a small quantity of white sand.

The Double Dahlia.—This flower has lately been called the Georgina. It is a native of Mexico, but has been brought to great perfection in England. The climate of the United States is remarkably congenial to its habits, and it grows with great luxuriance. It also succeeds admirably in the West India Islands. It is becoming quite fashionable, its many fine qualities bringing it into deserved estimation. When the weather gets warm, about the beginning of May, you will observe the young shoots which have forced their way through the old stem which is left with the root; split this down, so that a shoot or eye may remain with each piece. Plant in a rich soil in the borders three feet apart, or in clumps, selecting a variety of colours, and placing the tallest growing kinds in the centre. Put the root two inches below the surface, and if it has but one good eye, it will make a prettier plant than when it has more. After it has grown about three feet, take some day when the ground has been softened by rain, and drive in a stout stick, from six to ten feet long, about eighteen inches into the ground, near each plant; but take care not to let it be so close as to injure it; or the sticks may be put in at the time of planting. Let the stick be made from

one inch or one and a half inch plank, planed smooth, with a pointed and notched head, and painted green. The branches of the Dahlia are extremely brittle; and if your garden is exposed to the sweeping winds which often occur in the fall, you must tie every branch very carefully to the stick, otherwise the expectations of a year may be laid prostrate in an instant. This is not so necessary in the city, or in well sheltered gardens. Sometimes a few forward buds will open their premature beauties to the burning beams of a July or August sun, but their lustre is quickly dimmed. The latter end of September, some seasons all October, and part of November, witness the Dahlia in all its glory. The brilliancy of the flowers may be preserved for several days by shading them. Some of the kinds are inconceivably splendid, and no flower exhibits such a variety of all that is rich and magnificent in colours. What a pity it is, that with all its desirable properties, it should be so tender. The frost blights it like a pestilence, and when that has taken place, the stem must be cut off two or three inches from the ground, and after a few days the root taken up and exposed to dry for some time, then cover it well in *dry sand*, and put it away in the cellar to remain through the winter.

The London florists, it is said, from choice, plant the Dahlia in poor gravelly soil, and in England it may do very well; because whatever may be the nature of the soil, the continued moisture would force them to grow, if it were saw-dust; but here it is altogether a different matter. If the weather should remain dry for five or six weeks in summer, Dahlias planted in poor soil are absolutely burnt up, destroyed; and only those in good and generous soils can sustain the daily scorching of an American sun. We had forcible evidence of this fact,

both last year and this. A gentleman, whom we know very well, planted a piece of the Alexandria Victoria in a part of his garden, which is as rich as a hot bed, and in November it surpassed in beauty and magnificence any plant ever raised in a starved and hungry soil. It was upwards of twelve feet high, and there were in full expansion at the same time, between thirty and forty large double flowers of the most dazzling and brilliant colour.

In the early part of this summer a great quantity of rain fell, which was very favourable to the growth of the Dahlia, and many fine flowers opened in July; but the subsequent long-continued drought ruined and cut off all those which were not planted in a substantial soil.

Oxalis.—This is a genus of pretty little plants; their roots are very small bulbs, articulated, jointed, or granulated, in a manner peculiar to this genus; they grow well in a sandy loam, and require only very small pots; care must be taken not to water them after they are done flowering. If planted in the open ground, plant them in April in beds of light sandy soil; in case of severe weather, throw a mat over them till the beginning of May, then all covering may be removed for the season, and as each sort finishes flowering, and the leaves begin to fade, take them up, and place the bulbs in small pots of dry sand, carefully preserved from frost. If intended for blowing in the house in the winter season, plant them the beginning of September, and leave them out till the weather becomes cool, say beginning of October; their treatment in doors is the same as other bulbs.

Mexican Tiger Flower, (Ferraria tigrida.)—The root of this flower should be planted in April, or early in May, in a light sandy soil, in a warm situation; it will also do well in a pot, and flowers in

July. It often happens that the same root bears several flowers in succession. It is scentless, but very beautiful. In October, cut off the stalk, take up the root, dry it well for a few days, and put it away in dry sand, till the spring. If there are any offsets, take them off, and plant them separately from the mother root.

Depth and Distances.—Hyacinths, Amaryllis, Martagon, and other large Lillies, and Pæonies, should be planted at the depth of four inches; Crown Imperials and Polyanthus Narcissus, five inches; Tulips, Double Narcissus, Jonquilles, Colchicums, and Snowflakes, three inches; Bulbous Irises, Crocuses, Arums, small Fritellarias, Tiger Flowers, Gladiolus, Lachenalis, and Snowdrops, two inches; Ranunculus, Anemonies, Oxalis, and Dog's Tooth Violets, one inch; always measuring from the top of the bulb. The rows should be about ten inches apart, and the roots be placed from four to six inches apart in the rows, according to their size.

Take up Bulbous Roots about a month after the bloom is completely over, in the following manner; when the plants put on a yellowish decayed appearance, then take up the roots, and cuff the stem and foliage, within an inch of the bulbs, but leave the fibres, &c. attached to it; spread them in an airy room, for two or three weeks to dry, after which, wrap each root carefully in paper, (as the air is very injurious to bulbs) or cover them in sand perfectly dry.

The culture of delicate exotic bulbs in green-houses, &c. is sufficiently simple, provided two points be attended to; the first is, to take care not to injure their leaves and keep them near the light, and turn the pots frequently round, or the plants will draw to the light and grow crooked; and the second is, when the plants have done growing, to

give them little or no water. From ignorance of the importance of attending to these two points, bulbs have been often known to have lived for years in green-houses and shown no blossoms, especially of the genera *Amaryllis*. Whether a bulb (which does not bloom the first year) will blossom or not, depends entirely on its culture during the foregoing season ; that is, whether it was so circumstanced as to bring its leaves to perfection. If the leaves were fully grown, and properly exposed to the influence of the light, then the sap will have been duly elaborated by them, and an embryo flower formed in the bulb ; if otherwise, no embryo will have been formed, and no culture whatever during the succeeding year will effect the production of a flower during that year. All bulbs have a certain period of the year in which they are in a dormant state ; this, in a state of nature, is invariably after the seeds are ripened ; but as in a green-house, many or most of this family do not ripen seeds, the gardener is required to watch the period when the leaves show indications of decay, and then to lessen supplies of water, and shortly afterwards to cease from watering altogether, till the season returns, when the bulbs regerminate. The bulbs during this period are on the whole, best kept in pots, under the soil in a dry shady place, and in the same temperature as that in which they are in the habit of growing. Some bulbs, such as Hyacinths, Tulips, Narcissus, Crown Imperials, &c. may be taken out of the soil, (as before directed) and kept some time in papers ; but if this is done for more than seven or eight weeks, it tends to weaken the bulb.

The greater part of exotic bulbs should be taken out of the pot and repotted in a fresh soil, a week or two before their period of regerminating ; loam, with a little sand, vegetable mould, or mould form-

ed by the decay of manure, forms a compost, or soil, in which almost all bulbs will thrive.

The *Amaryllis* requires a richer loam than most bulbs, and *Ixias*, *Gladiolus*, and *Oxalis*, a soil rather more sandy than the general average, and this compost answers well for most of the Cape, or South-American bulbs. It is very desirable that plants or bulbs in pots, should be named; the best mode of naming plants in pots, is to take a flat slip of wood, sharpen one end; rub a little white lead on two or three inches of its smoothest surface at the opposite end; write the name with a black lead pencil on the white lead when it is about half dried—(the pencil mark will dry in with the paint, and nothing but the decay of the wood will efface it)—and then insert the stick in the pot.

Amaryllis Formosissima, or *Jacobeana Lily*.—This is a flower of great beauty. It throws out gracefully its glittering carmine-coloured petals, which have a brilliancy almost too intense for the eye to rest upon. It must be planted in a clean, new soil, naturally rich: take some from under fresh grass sod, and mix in a little sand. Plant in April or May, in a pot, or in the open ground in a sunny situation: place the root so that the highest point is not more than an inch above the surface: it will flower in June and July, and will well repay the little trouble of putting it into the ground. In November cut off the stalk, take up the root, and after drying it for a few days, pack it in *dry sand*, and put it in the cellar, to keep it from the winter's frosts.

The *Amaryllis gigantea*, *Johnsoni*ensis, *vitata*, *regina*, and *belladonna*, should be potted very carefully, observing to set the bulb not more than half its depth in the ground, that is, on the top of the earth, so that half of the bulb can be seen; if planted any depth in the earth they will not bloom, as

the plant derives its nourishment only from the fibres; all the *Amaryllis* genus require a warm exposure.

METHOD TO BLOOM HYACINTHS AND OTHER BULBS
IN THE WINTER SEASON, IN POTS AND GLASSES.

For this purpose, Single Hyacinths, and such as are designated earliest among the double, are to be preferred. Single Hyacinths are generally held in less estimation than double ones, their colours, however, are more vivid, and their bells, though smaller, are more numerous; some of the finer sorts are exquisitely beautiful; they are preferable for flowering in winter, to most of the double ones, as they bloom two or three weeks earlier, and are very sweet scented. Roman Narcissus, Double Jonquilles, Polyanthus Narcissus, Persian Cyclamens, Double Narcissus, and Crocuses, also make a fine appearance in the parlour during winter. It is a remarkable circumstance of the Crocus, that it keeps its petals expanded during tolerably bright candle or lamp light, in the same way as it does during the light of the sun. If the candle be removed, the Crocuses close their petals, as they do in the garden when a cloud obscures the sun; and when the artificial light is restored, they open again, as they do with the return of the direct solar rays.

Bulbs intended for blooming in pots during the winter season, should be planted during the months of October and November, and be left exposed to the open air until it begins to freeze, and then be placed in the green-house, or a room where fire is usually made. They will need moderate occasional waterings, until they begin to grow; then they

should have abundance of air in mild weather, and plenty of water from the saucers, underneath the pots, whilst in a growing state; and should be exposed as much as possible to the sun, air, and light, to prevent the leaves from growing too long, or becoming yellow.

The roots of the *Double Roman Narcissus*, if planted late in the autumn, will flower in January; they may be put into pots of earth, or into bulb glasses with water only; should be kept sheltered as soon as the weather turns cool; their beauty, fragrance, easy culture and cheapness seem to us to make one of the most desirable flowers imported for the ornament of our rooms.

Hyacinths and other bulbs intended for glasses should be placed in them about the middle of November, the glasses being previously filled with pure water, so that the bottom of the bulb may just touch the water; then place them for the first ten days in a dark room to promote the shooting of the roots, after which expose them to the light and sun as much as possible. They will blow, however, without any sun; but the colours of the flowers will be inferior. The water should be changed as often as it becomes impure; draw the roots entirely out of the glasses, rinse off the fibres in clean water, and the glasses well washed inside; care should be taken not to suffer the water to freeze, as it not only bursts the glasses, but often causes the fibres to decay. Whether the water be hard or soft is of no great consequence; but soft or rain water is considered preferable, but it must be perfectly clear.

Forced bulbs are seldom good for any thing afterwards; however, those who wish to preserve them, may immerse them wholly in water for a few weeks; and then having taken them up and dried them in the shade for a few days, they may be plan-

ted in a good soil, when they will sometimes flower the second year. It does not clearly appear in what way the water operates when the bulb is wholly immersed; but it is certain that bulbs so treated increase in size and solidity by it, and have an incomparably better chance of flowering the second year, than those which have not been so treated. Most probably their total immersion enables them to obtain a greater proportion of oxygen from the water.

Nosegays should have the water in which their ends are inserted changed, on the same principle as bulbous roots; and a much faded nosegay, or one dried up, may often be recovered for a time, by covering with a glass bell, or cup, or by substituting warm water for cold.

Very fine Hyacinths have been grown in a drawing-room, in the following novel manner. A quantity of moss, classically called *hypnum*, and vulgarly *fog*, was placed in a water-tight box, about eight or nine inches deep, into which the bulbs were placed in the end of September, without mould, and duly watered. The result of this experiment was highly favourable.

FLOWERING AND ORNAMENTAL SHRUBS.

Shrubs are so closely connected with flowering plants, and indeed so many of them are embellished with flowers, that they may be considered as essential to the completion of an ornamental garden. They are all perennial, and are divided into two classes, deciduous and ever-green; the former lose their leaves in the winter, the latter only shed them when others are ready to supply their places. Shrubs are not only necessary to the embellishment

of a flower garden, but many kinds of them are eligible for hedges to it, and may be planted at a trifling expense. These hedges should be frequently trimmed and trained, the sides cut even, and the tops sparingly clipped, so as to make them ornamental, as well as useful, and also to increase the vigour of their growth. When the hedges become open or naked at the bottom, they should be plashed down; this is done by cutting the branches half through near the ground; they will then bend easily, and may be interwoven with the adjoining branches. When Shrubs, Creepers, or Climbers are planted against walls or trellises, either on account of their rarity, delicacy, or to conceal a rough fence or other unsightly object, they require different modes of training; some attach themselves naturally, as the ivy, and merely require to be occasionally guided, so as to cause a regular distribution of their shoots; others must be treated like fruit trees, trained thinly, if blossoms are the object, and rather thicker, if the intention be to show the foliage to the greatest possible advantage.

Ornamental shrubs grow from one foot to twelve or more in height; and where such are planted for ornament, the height of each plant when full grown should be considered, and also the mode of growth, that every one may be so planted as to show to advantage, observing that the tall growing should be planted in the back borders, and those of low growth forward; but if they are required to be planted in clumps, they should be so arranged as to rise gradually from the sides to the middle, and be afterwards neatly trimmed. Shrubs require an annual pruning, at which time, cut out all irregular and superfluous branches, and head down such as require it, forming them into handsome bushes; apply stakes to such as may need support, and see that

the low growing ones do not injure each other, nor interfere with other dwarfish plants near them.

Many kinds of Shrubs may be raised from seed sown early in the spring, but are more commonly propagated by suckers, layers, or cuttings. Like other plants, they require a good soil, which should be manured every two or three years, and some of the tender kinds should have some protection in winter. The following list, taken from an article in the New-York Farmer and Horticultural Repository, furnished by Mr. Floy, contains the most of those usually planted in gardens and on lawns. These will furnish a succession of flowers from spring until fall, and may be obtained at the nurseries here at moderate prices.

Amorpha fruticosa.—Indigo shrub, with handsome bunches of purple flowers in great quantities.
Amygdalus nana, Dwarf double flowering Almond, a very beautiful dwarf shrub, about 3 feet high.
Aralia spinosa, or Angelica tree, about 10 feet high, flowers in very large bunches, and continues a long season. *Cytisus Laburnum*, or Golden chain, a most elegant shrub, with long racemes or bunches of yellow flowers, in the greatest profusion; there are two kinds, the English and the Scotch Laburnum. The Scotch is the largest, forming a pretty large shrub; the English kind is greener, more compact, and by some, thought to be the handsomest; they ought to be in every garden. *Calycanthus Floridus*, Allspice or sweet scented shrub, a native of the Southern States; the flowers are of a very dark chocolate colour, and the fragrance very much resembles ripe strawberries, easily kept where once introduced; the shrub generally grows about 5 feet high in gardens. *Ceanothus Americanus*, Red root, or Jersey Tea tree, worth having a plant or two in the collection, as it flowers in profusion. *Cercis si-*

liquastrum, or Judas tree. The flowers appear very early before the leaves come out, and make a fine appearance ; as it grows rather tall, it is calculated for the back row of the shrubbery. *Colutea arborescens*,, or Bladder Senna, having bunches of yellow flowers, which are succeeded by seeds in a kind of bladder, calculated for the back or centre row of shrubberies.

Cratægus oxyacantha, the Hawthorn. It makes a pretty appearance planted out singly in the back or centre row ; the flowers are very fragrant ; it is sometimes called the Pride of May ; the *double white*, *double scarlet*, and *single scarlet* Hawthorn, are extremely beautiful, and ought to be in every plantation. Hawthorn hedges are much used in England, where they look very handsome when kept clipped ; but they do not answer so well in this country, the heat of our summers causing the leaves to fall off early, often in July ; on that account they are not much used. We have several things which are better calculated for that purpose.

Cydonia Japonica, or *Pyrus Japonica*, a very beautiful scarlet flowering shrub, from Japan, has not been in cultivation here for many years. It is found to be very hardy, resisting our most severe frosts ; it is ever-green, flowers very early, and continues a long time. A second flowering takes place in the latter part of the summer. It is every way a desirable shrub. *Daphne mazerium*, one of our most early flowering shrubs, often flowering in February, and very sweet scented. It is rather tender in some situations, but will stand our ordinary winters very well in a sheltered situation.

Dirca palustris, or Leather wood, a pretty little shrub, growing very regular in shape, and has the appearance of a large tree in miniature ; it is a na-

tive of our northern states, the flowers appear very early, are yellow, and come out before the leaves.

Gymnocladus canadensis, or Kentucky Coffee tree. The berries have a resemblance to coffee, and are said to be used for this purpose ; however, it is a beautiful tree, with handsome feathered leaves, and makes a fine contrast with others. It should be planted in the back or centre of the plantation, and is very hardy.

Halesia diptera, and *Halsea tetraptera*, two winged and four winged Silver Bell, or snow-drop tree. They are both natives of the southern states, but are perfectly hardy here ; our most severe winters do not hurt them. The former kind flowers a month later than the latter kind, which flowers early in May. They are both elegant shrubs.

Hibiscus Syriacus, *fl. pleno* The double flowering althea frutex, of which there are several varieties, the double white, double red, double red and white, and striped, are the most showy ; they commence their flowering late in July, and continue till fall, coming in at a very acceptable time. The single kinds, of which there are many varieties, are scarce worth cultivating, the double ones being raised quite as well, and are equally hardy. These are indispensable in every plantation.

Hypericum frutescens, shrubby hypericum. There are several species of this small beautiful shrub, all natives of the southern states, but perfectly hardy here. They all flower in the greatest profusion, and continue for a long season. They should be planted in the front row.

Kerria Japonica, or *Corchorus Japonica*, yellow Japan Globe flower ; although a native of Japan, like many other Japan flowers, it is perfectly hardy here. It flowers in the greatest profusion at all times, ex-

cept in the very dead of winter, and will grow almost in any soil or situation.

Kœlreuteria paniculata, Japan bladder tree, or Kœlreuterius. This is another hardy shrub from Japan. It has long racemes of flowers, succeeded by bladder-like fruit, and is worthy of cultivation in every good collection.

Ligustrum vulgare, virens. Large European Privet, a very handsome evergreen shrub, flowering in great profusion, and succeeded by bunches of black round berries. It bears clipping well, and is therefore well calculated for hedges, or to enclose ornamental plantations. It grows quick, and is well adapted to our climate, and when planted in a hedge row, and kept clipped, it makes a beautiful hedge, and ought to be in more general use.

Philadelphus coronarius, or common syringo, is very ornamental, producing its sweet scented flowers early, and in abundance, and also *sweet scented Philadelphus inodorus*, and *P. grandiflorus*, Garland Syringo, both natives of the southern states, but quite hardy here. The flowers are large, and they keep their flowering for several months in wreaths or garlands; it is well calculated for the centre row, and also to hide unsightly objects. It has a beautiful effect when mixed with monthly honey-suckle, &c.

Persica, or *Amygdalus Persica, fl. rosea pleno*.—The double flowering Peach is very beautiful in shrubberies. It sometimes bears fruit, but it is cultivated entirely for its beautiful blossoms. A few trees also of the Chinese double flowering Apple, *Pyrus spectabilis*, have also a beautiful effect for the same purpose.

Rhus cotinus, Venetian sumach, Aaron's beard, sometimes called fringe tree, is a fine shrub, calculated for the centre of the clump or shrubbery. Its

large branches of fringe remaining all summer, give it a curious and striking effect.

Ribes Missouriensis, or Missouri currant; there are two species of this very ornamental shrub from Missouri, introduced by Lewis and Clarke; they are quite hardy, and flower in great profusion.

Robinia glutinosa, and *Robinia hispida*, the former a pretty large shrub, with large bunches of flowers in great abundance, the other a smaller shrub; they are both of them worthy of a place in all large collections.

Sorbus aucuparia, Mountain ash, or Roan tree.—This is a very beautiful shrub of the larger size; the leaves are ornamental; the flowers and fruit, which are produced in large bunches, are beautiful; the fruit remains till late in the autumn; it is a native of Europe.

Sorbus Canadensis. This is a native of our northern frontiers and mountains; it does not grow as large as the former; the berries are smaller and red, the former larger and of an orange colour, but otherwise much resemble it.

Spartium junceum, and *Genista*, two or three species of broom, with bunches of yellow flowers in very great profusion; the *Genista* or Spanish broom has white flowers, is also very pretty, but not quite so hardy as the former.

Symphoria racemosa, or snow-berry, sometimes called snow-apple, a pretty little shrub; the bunches of wax-like white berries which it produces during the whole summer, give it a beautiful appearance.

Syringa vulgaris, or common Lilac, is well known to all, and needs no comment. The white variety not quite so common—they are only fit for outside plantings, as they sucker very freely, and soon make themselves common.

Syringa Persica, or Persian lilac, is a delicate low shrub the flowers very abundant, and the leaves small and delicate. There are two varieties of the Persian lilac; the white flowering, and the blue or purple flowering.

The *Chinese cut leaved lilac* is very curious; the leaves are cut like Parsley, the flowers growing in longer racemes than the former. *Siberian*, or large Persian lilac. The bunches of flowers are very large, and continue in season a long time after the common lilac.

Rosa, or roses, a pretty numerous variety of them; some reckon five or six hundred kinds. They are accounted the most beautiful of Flora's productions. Perhaps a very handsome collection might be made of about 50 of the best sorts, which, by taking said quantity, I suppose might be obtained at about 50 cents each under name; and generally a fine collection un-named at half that amount. No good garden or shrubbery can be without them.

Tamarix Galica, or French tamarix, and the *Tamarix Germanica*, German tamarix, are two pretty shrubs, the leaves and branches are small and slender, producing quantities of beautiful flowers, and form a very striking contrast to the other part of the shrubbery.

Viburnum opulus, or Guilder rose, otherwise called Snow-ball, is a very showy shrub, with large balls of snow white flowers in the greatest profusion; and is indispensably necessary to every shrubbery.

Vitex agnus castus, or Chaste tree, a pretty and singular shrub, flowering the most part of the summer.

Bignonia radicans, or trumpet creeper, with bunches of red trumpet flowers, large and showy.

Bignonia grandiflora, much like the former in habit and appearance, but the flowers are much larger. It is said to be a native of China, and the former a native of this country. They are both perfectly hardy, and will climb up brick work or wooden fences without any assistance.

Clematis, or Virgin's Bower. There are several species, some of them tender, or not sufficiently hardy for our severe winters without protection. The *Clematis Virginica*, *Viorna*, *Viticella*, and *Vitalba*, are perfectly hardy. *Glycine Sinensis*, or *Wistaria Sinensis*, is a handsome China creeper of recent introduction from China, and is not yet common in our nurseries. It is a beautiful vine, running to a great height, and loaded with long racemes of purple flowers, and is highly spoken of in the Gardener's Magazine.

American glycine frutescens, or *Wistaria frutescens*. This beautiful brother of the Chinese kind, is a native of our Southern states, grows much in the same way as the other, and perhaps not inferior. Although this fine creeper has been long known in England, we have not heard much about it by English writers; the conclusion seems to be that it does not flower well in England. In fact, none of our southern plants do well in England, while those from China do very well—here however, it is quite the reverse. I have the *Chinese Wistaria Sinenses* from 15 to 20 feet long, and the American *Wistaria* about the same height. The Chinese does not look so vigorous and green as his American brother—The American *Wistaria* should be planted in every garden with other creepers, or run up the trees in shrubberies, according to its natural disposition.

Lonicera, comprehending all the fine sweet scented honeysuckles; of the Italian kinds, the monthly honeysuckle is decidedly superior, continuing to

flower all through the summer, until late in the fall, and very fragrant. Some of the other European kinds may be occasionally introduced in large shrubberies—two or three American kinds deserve particular notice.

Lonicera semper virens, or Coral trumpet monthly honeysuckle, is extremely beautiful, flowering during the whole of the summer, with its thousands of scarlet bunches. It is, however, destitute of scent, *Lonicera Fraseri*, also an American; the flowers are like the other kind in almost every particular, except colour, this being a bright yellow.

Lonicera pubescens, or *Caprifolium pubescens*, a large and beautiful honeysuckle from the North-west coast; the flowers are larger and of a bright copper color, inclining to orange—they are all perfectly hardy.

Lonicera flexuosa.—Chinese honeysuckle of late introduction; it is perfectly hardy, withstanding our most severe frosts without the least injury; it is a very sweet scented honeysuckle, grows rapidly, and to an immense height. It flowers in pairs and threes all up the branches, covering the whole plant completely with flowers. It blossoms spring and fall, and is a very valuable acquisition to our gardens and shrubberies.

Lonicera Japonica, or Japan honeysuckle. This bears flowers in great profusion, which are white, afterwards becoming of a light yellow. This is not so hardy as the former, and requires a little protection in winter.

I shall only add to the above the running kinds of roses, although there are many other things which might be mentioned.

Rosa multiflora, from China, is pretty well known, producing thousands of small double red roses in bunches. It requires a sheltered situation from some

of our keen northwesterners. *R. multiflora alba*, from the same country, is of late importation, but as it increases readily, may be obtained at about the same price as the former; the bunches of flowers are white. *Rosa Grivellis*, a running rose also from China, the flowers of various colours. *Rosa rubifolia*, Raspberry leaved rose, from our northern frontiers, and extending over the western country; although a single flowering rose, it produces large bunches of flowers, which are different coloured, on the same bunch, exactly like the former China kind, and is another instance of the similarity of plants, natives of China and our country.

Rosa canina fl. pleno. English double dog rose, is a very pretty little double rose, and will run to a great height. *Rosa Bansii*, Lady Banks' double white China running rose. It runs up, and spreads much—it may be easily known from others of the running roses, by its being entirely destitute of prickles. *Rosa Noisette*, and *Champney's*, are said to have been raised from China seeds in Carolina—they are not strictly running roses, but as they grow up tall, are fine ornaments for the shrubbery, flowering during the whole of the summer and fall in large clusters. The Madeira rose, or *double white cluster, musk*—It also flowers all through the summer and fall months, and is therefore well adapted for the shrubbery. *Rosa Cherokensis*, called the non-descript, or Georgia rose—the flowers are very large and white, the centre yellow. This is a running rose, growing very high around trees, &c.

Rosa rubiginosa, or sweet briar, is too well known to need description.

Deciduous shrubs may be planted at any time after they lose their leaves, and before the buds begin to expand in the spring, provided the ground can be brought into good condition to receive them;

the holes should be dug capacious enough to hold the roots without cramping them, and some earth, well pulverized must be thrown equally among the fibres of the roots, which should be well shaken and trodden down around the plants, until brought to the level required. Evergreens should be removed carefully with a ball of earth connected with their roots, and some good mould should be provided to fill in with.

DIRECTIONS FOR THE GENERAL MANAGEMENT OF GREEN-HOUSE PLANTS.

Having already prepared sufficient matter for a book of double the size of the former edition, I am compelled to be brief in my observations on such ornamental plants as are generally cultivated in hot and green-houses. This description of plants embraces those which are collected from various climates, and thrive best in a temperature and soil similar to that in which nature first produced them : hence they who propagate exotic plants, must provide suitable composts, and also separate departments, where the different degrees of heat may be kept up, according to their nature and description. Some of these are raised from seed sown in the spring, others by layers, suckers, and offsets detached from the old plants, and many by slips and cuttings planted at different seasons of the year, according to the varied natures and state of the plants. Many kinds require the aid of glass coverings and bottom heat, created by fresh horse dung, tan, &c.

Were I to attempt to give directions for the propagation of all the varieties of useful and ornamental exotic plants cultivated in various parts of our country, it would require an entire volume. The catalogue of green-house plants alone kept by the

enterprising proprietor of the Linnean Botanic Garden at Flushing, occupies fifty pages of close matter ; it would therefore be impossible to do justice to the subject, without dividing upwards of two thousand varieties of plants into classes, according to their varied natures, and treating of them under distinct heads ; I shall therefore not attempt, in this edition, to write largely on the subject.

In order to render this little work useful to those who may wish to avail themselves of the pleasure of nursing some of those beauties of nature in their own dwelling houses, during the most chilling days of our severe winters, and to afford amusement to the ladies, at a season when our gardens are deprived of their loveliest charms, I shall discuss some essential points connected with the management of green-house plants, in as explicit a manner as possible.

The following hints were selected for the first edition of this work, and appear to the author to embrace the most important points connected with the care of plants in the winter season.

The generality of those denominated green-house plants, and which are kept in rooms, should be placed where they can have the light of the sun, without being exposed to frost. Air, heat, and moisture are essential to the growth of plants, but these should be given in due proportions, according to circumstances. In frosty weather they should be kept from the external air, and watered very sparingly. When water is necessary, it should be applied in the morning of a mild sunny day. The plants should be kept free from decayed leaves, and the earth at the tops of the pots should be sometimes loosened to a moderate depth, and replenished with a portion of fresh compost. Plants kept in private houses are often killed with kindness. The

temperature of a room in the winter need not be more than ten degrees above freezing. If plants are healthy, they may be kept so by attention to the preceding hints, unhealthiness generally arises from their being subjected to the extremes of heat, cold, or moisture, or from total neglect.

In order that the ideas above advanced may be duly considered, it may be useful to indulge in a more minute description of the nature of plants, and to show in what manner the elements operate upon them. It is an acknowledged fact, that the roots of plants require moisture, and therefore penetrate the earth in search of it, and that the plants themselves are greatly nourished by air, and spread their branches and leaves to catch as much as possible its enlivening influence. Light also is so far essential, that there can be no colour without it; witness the blanching of celery and endive, where the parts deprived of light become white; place a plant in almost any situation, it will invariably show a tendency to turn to the light; the sun-flower is a striking example of this singular fact. As the leaves supply the plant with air, and the fibres of the roots supply it with nourishment, to strip off the leaves, or destroy the fibres, is to deprive it of part of its means of support. Having shown that air and water are essential to vegetation, and light to its colour, experience shows us that heat, in a greater or less degree, is not less necessary to the growth of plants; it is therefore requisite, that in taking plants into our rooms, we should attend to these particulars.

The internal structure of plants is composed of minute and imperceptible pores, which serve the same important purpose in the vegetable as veins in the animal system; they convey the circulation of the sap in the former, as the veins do that of the

blood in the latter ; but it is by no means settled as yet by physiologists how the food of plants is taken up into the system and converted into their constituent parts.

From the foregoing considerations and facts, it is evident, that, as air, heat, and moisture are each essential to vegetation, that water should only be given in proportion as heat and air are attainable. In the summer season green-house plants may be exposed to the open air, from the early part of May, until the end of September, by being placed on the ledges of windows, or on a stand erected for the purpose, or in the absence of a nursery bed of flowering plants, they may be introduced into the regular flower beds, to supply the place of such plants as may wither and die in course of the summer, by being turned out of the pots and planted, or plunged in the earth with the pots.

In the heat of the summer season, plants generally require water every evening, and in the absence of dews, the earth about their roots may sometimes need a little early in the morning ; but experience shews, that the roots of plants more frequently get injured from being soddened in water, than from being kept moderately dry. Having before intimated that exotic plants will generally thrive best in a temperature and soil similar to that in which nature first produced them, it may be necessary to remind the reader, that we have the means of attaining suitable composts from our own soils, and from sand, decayed leaves, rotten dung, and various kinds of peat, bog, and rock mould ; these ingredients being judiciously mixed and prepared, may be suited to all the various kinds of plants, and should be used as occasion requires. As the roots of plants make considerable growth in the course of a summer, it will be necessary to examine them

by turning them out of the pots, this may be done early in September, at which time all matted and decayed roots should be pared off, and the plants shifted into larger pots which being filled with suitable compost, and watered, will be ready to be removed into the house on the approach of cold nights, which is generally early in October.

Green-house plants require an annual pruning, and should be occasionally headed down, in order that their size and appearance may be improved ; the best time for doing this is soon after they have done flowering, and while they are in a growing state. Having endeavoured to furnish my readers with the artificial means of preserving tender plants in a climate foreign to that which nature has provided for them ; I shall call their attention to another class of plants well calculated for the windows of a house.

I allude to the many beautiful varieties of the Chinese Chrysanthemum ; these are frequently cultivated in pots, and may be taken from the ground and put into pots even when in full flower without injury, and when the bloom is over, returned to the garden ; and in the spring following, they will throw up an abundance of suckers.

The following list taken from Mr. Prince's catalogue, consists of some of the best varieties of the Chrysanthemum, and are entitled to a place in every flower garden. In October and November, when the waning year has left our gardens comparatively cheerless, these with their various colours, deck them out in gaiety, and prolong the semblance of summer. They are perfectly hardy and will brave our severest winters.

Chrysanthemum sinense.

- | | |
|---|--|
| 1 White quilled | 26 Quilled light purple |
| 2 Pale buff, or orange | 27 Expanded do. do. |
| 3 Changeable, <i>red and orange</i>
<i>flower on the same plant.</i> | 28 Quilled yellow |
| 4 Purple | 29 Double Indian yellow, <i>superb</i> |
| 5 Lilac quilled | 30 Double Indian white, <i>superb</i> |
| 6 Rose coloured, or pink | 31 Brown purple |
| 7 Lilac and white, <i>changeable</i> ;
<i>the flowers vary to lilac, to</i>
<i>white with a purple centre, and</i>
<i>to pure white.</i> | 32 Early blush |
| 8 Dark crimson, or Spanish
brown | 33 Golden lotus |
| 9 Straw coloured quilled | 34 Quilled purple |
| 10 Golden yellow | 35 Starry purple |
| 11 Tasselled white | 36 Park's small yellow, <i>beautiful</i> |
| 12 Superb do. | 37 Quilled salmon |
| 13 Semidouble quilled do. | 38 Semidouble quilled pale o-
range |
| 14 Paper do. | 39 Two coloured red |
| 15 Quilled flame yellow | 40 Curled buff, or salmon |
| 16 Sulphur do. | 41 Large lilac |
| 17 Superb clustered do. | 42 Late pale purple |
| 18 Small do. | 43 Two coloured incurved |
| 19 Single flame yellow | 44 Blush rannnculus |
| 20 Quilled pink | 45 Late quilled purple |
| 21 Semidouble quilled do. | 46 Tasselled lilac |
| 22 Quilled orange | 47 Tasselled yellow |
| 23 Semidouble quilled do. | 48 Yellow waratah |
| 24 Early crimson | 49 Pale lilac |
| 25 Curled lilac | 50 Large buff, <i>superb</i> |
| | 51 Barclay's |
| | 52 Aiton's |
| | 53 Sabine's |

Chrysanthemums may be propagated from seed and cuttings, and each plant will produce several suckers, which may be separated every spring; as the flowers are liable to be injured by the rain in autumn, it is advisable to take up a few plants and place them in a light room or green-house, which will preserve them for some time.

Many people keep their late blooming plants in the house through the winter; this is a bad practice, as the heat and want of air will exhaust or destroy the plants altogether. If the flowers fade before hard frost prevails, it is best either to plunge the pots into the ground with the plants, or turn

them out of the pots, and plant them with the balls of earth entire into the borders of the flower garden. Early in May, such as may be intended for potting the ensuing season, should be divided at the roots, if not potted, and planted, each kind separate. One single stem is sufficient for a moderate sized pot, if the object be to have bushy plants; but if showy plants are desired, one of each of the varied colours may be selected for each pot, which should be sufficiently capacious to hold them without crowding them, as this will cause the plants to grow weak and slender. If this happens early in the summer, a stocky growth may be promoted by clipping the tops, and they will bloom in great perfection at the usual season.

CALENDAR AND INDEX.

THE object of this Calendar, is to assist the memory of the gardener, and to show him, at one glance, that he may find employment in some of the departments of gardening in every month of the year. The figures refer to the pages in which further directions may be found, relative to the operations adverted to.

JANUARY.

It is customary at this season of the year, with all prudent men, to look around them, and endeavour to ascertain the results of their industry throughout the past year, in order to make improved arrangements for the future. The mere gardener, having no complicated accounts to adjust, may occupy his time to valuable purposes. If he be not a book-reader, he should be a book-keeper, (see page 2,) and he should frequently take a survey of his former practices and those of his acquaintance, with a view to improve on every thing he has done, or seen done. If he consult writers on Horticulture, he should do as the author has endeavoured to do in preparing this little work for the press; not adopt the mere theory of a subject, nor indulge in speculative ideas, nor even tread in the steps of others, but endeavour to erect his edifice of knowledge upon a good settled foundation. In all his pursuits, whether he attempts to follow the example of practical and exemplary men, hear lectures, or consult any authors on the subject, he should do as every sensible man does at his daily meals, take that which suits him best, and leave the residue for others. If this little work should be

considered worth an annual perusal, he may read the general remarks in this month, (January,) and make a memorandum of such things as may be obtained at a leisure time, in preference to driving it off till it is wanted. I shall endeavour to make my Calendar serve as an index to the book, and in pursuit of my object, shall begin at page 1 of the general remarks, which suggests, that if a man has a garden to form, he will require fencing materials. If these should be already at hand, every gardener should provide manures, ingredients for the destruction of insects, drilling machines and other tools, poles or rods for the support of such Beans, Peas, or other climbing plants which he may intend to cultivate ; and if he intend to use hot beds, or forcing frames, he should make arrangements to get compost and heating materials, in time for the work to be performed in the next month. If he depends on this book for information, he may read the general remarks from page 1 to 10, and also page 86, on Forcing Vegetables.

FEBRUARY.

Although stern winter with its ice bound chains, exerts its influence over the soil, the gardener may find employment preparatory to commencing his operations of ploughing and planting, as the year progresses. Perhaps the most important business at this season, is to collect plenty of manure ; next to this, the gardener, who intends to raise early plants for forcing or otherwise, should see that his hot bed frames are in good repair and ready for use ; he should also repair his sashes, and make straw mats to cover them with. In preparing dung or other heating materials for hot beds, or forcing pits, let it be kept secure from heavy falls of snow or rain, and frequently turned over preparatory to its being made into a bed. With a view to give all attention to culture as the season advances, the gardener should look over his hardy fruit trees, and hardy vines, and commence pruning them, by cutting out all dead and superfluous branches ; he may also clean trees from

moss and canker, and search for the nests of insects, with a view to destroy them while in a torpid state, to prevent their spreading. If he has trellises, or any implements of husbandry out of repair, he should embrace the most favorable opportunities of putting them in good condition, and of repairing his fences, &c.

Previous to making hot beds, select a situation that is well protected by a close fence or wall, and not in any way connected with any building calculated to harbour rats, mice, moles, &c., which are very apt to take up their abode in warm dung, to the great injury and sometimes destruction of the beds. It is necessary that the foundation for the beds be drily situated, and not liable to be inundated with water from melting snow, &c. When all is prepared as directed, page 85 to 89, begin to sow Cabbage, Egg-plant, Lettuce, and Tomato seed, 85; force Asparagus, 90; Kidney Beans, 92; Cucumbers, 94; plant Peas, 99; Potatoes, 100; sow Radish seed, 101. *In cold beds well protected*, plant Broad Beans, 20 and 92; sow Cabbage seed, 31.

After the seeds are sown, the beds will require constant attention; cover up well in cold nights, and give air at all opportunities, taking care to regulate the heat in the beds, as directed under the different heads, from page 85 to 100. If the heat be excessive, it must be decreased as directed, page 89, and if it should become necessary to let off steam in cold weather, care must be taken to cover the apertures sufficiently to keep out frosty air.

MARCH.

This month affords considerable employment to an industrious gardener. Manure may be drawn on the ground, and distributed in heaps, ready to spread, see page 9; and the hot beds and forcing frames will require constant attention. Cover up warm in cold nights, and give additional air as the season progresses, to prevent the plants growing weak, taking care to regulate the heat as directed for the different kinds of vegetables.

If any additional frames are to be put down this month, either for forcing or forwarding vegetables, they should be attended to in time as directed.

In order to afford time for cultivating the soil as the weather moderates, the gardener should proceed with his business of pruning and cleaning fruit trees, shrubs, &c. at all opportunities; and if any removal be necessary, or fresh trees, shrubs, vines, &c. are required, these things should be obtained and planted this month if possible. Begin the work of the kitchen garden as soon as the earth can be brought into good condition, and transplant hardy Lettuce plants, 45; dress Artichoke beds, 14; Asparagus, 18; Rhubarb, 60; Sea-Kale, 64; and prepare to make new plantations of these vegetables. Plant Broad Beans, 19 and 92; Beet seed, 24; plant Cauliflower, plants under hand-glasses, 29 and 93; sow Cabbage seed, 31 and 85; Carrot, 34; Celery, 35; plant Chives, 38; Cucumber, 94; sow Egg plant seed, 41; Garden Burnet, 43; Leek, 44; Lettuce, 45; plant Melon seed, 98; sow Onion, 49; Parsley and Parsnip, 51; Pepper, 52; plant Peas, 53; Potatoes, 100; sow Radish seed, 57; plant Rocambole, 58; Rhubarb, 59; Salsify, 61; Scorzonera, 62; Sea-Kale, 63; Skirret, 66; sow Spinach seed, 67; Tomato, 69 and 85; Turnip seed, 70; prepare to make Hop plantations, 73; Horseradish, 78; Herbs, 79. Plant esculents for seed, beginning with the hardiest kinds; raise up and plant Cabbage stumps, &c., to produce greens early for the table. Towards the end of the month, the covering may be taken from hardy flowering plants, and the beds and borders dressed, at the same time, clip edgings, of box, &c.; clean, relay, or make new gravel walks, 112; prune and transplant flowering shrubs and hardy herbaceous plants, and sow flower seeds of the hardy kinds, 116; attend to and turn over compost heaps.

APRIL.

This is the most important month in the year for garden operations. Finish as early as possible the

planting of esculents for seed, and see that all plants of the same genus are remote from each other, or they will adulterate. All the soil of a garden should be dug or ploughed this month if possible, and some of the early crops sown last month will require hoeing and weeding.

If not done last month, make plantations of Artichokes, 11; Asparagus, 15; Beans, *vicia faba*, 19; towards the end of the month, plant Beans, *Phaseolus*, 22 and 23; plant Beet seed, 24; sow late kinds of Broccoli seed, 27; seed of Cabbage for summer use, 31; Cardoon, 34; plant Carrot and Celery, 35; Chervil and Chives, 38; sow Cress seed, 39; plant Cucumber, 97; sow Endive, 42; Garden Burnet, 43; plant Indian Corn, 43; sow Leek and Lettuce seed, 44; plant Melon, 98; sow Mustard seed, 48; plant Nasturtium, 48; sow Onion seed, 49; Parsley and Parsnip, 51; plant Peas, 53; Potatoes, 55; Sweet Potatoes and Pumpkins, 56; Patience Dock, 57; sow Radish seed, 57; plant Rocambole, 58; Rhubarb, 59; Salsafy, 61; Scorzonera, 62; Sea-Kale, 63; sow Sorrel and Skirret, 66; Spinach, 67; plant Squash, 68; sow Turnip seed for summer use, 70; Navet, or French Turnip, *variety esculenta*, 33; make Hop plantations, 73; Horseradish, 78; Herbs, 79.

Besides the work of sowing and planting the various kinds of seeds above enumerated, all the strongest plants of Cabbage, Cauliflower, and Lettuce, must be taken from the hot beds and frames, and transplanted into the regular beds in the open garden. All kinds of flower seeds, except the very tender annuals, may be sown this month, 116 and 120, and the hardiest greenhouse plants may be exposed to the open air in mild weather. Attend to such other business in this department as was left undone last month, 112, and see that the garden be kept neat and free from weeds. Finish planting fruit trees, and attend to the Strawberry beds, &c.

MAY.

As the warm weather progresses, the gardener should be on the alert, in order to conquer the various kinds of insects. Burn damp litter, stubble, leaves, weeds, &c. near fruit trees, and sow ashes over the ground. Attend to plantations of Cabbages, Cauliflower, &c.; hoe them frequently, and draw earth up to their stems; look out for and destroy grub-worms, caterpillars, and other insects, 8; weed and thin the early plantings of Beets, Carrots, Parsnips, Salsify, &c., and destroy weeds, to prevent their seeding in the ground. Plant and sow such kinds of seeds as were omitted last month, and transplant Cabbages, Egg-plants, Lettuce, Tomatoes, &c. from the hot beds and warm borders. Plant Beans, 22 and 23; Beet, 24; sow Borecole and Brussels Sprout seed, 25; Broccoli, 27 and 28; Cauliflower, 30; Cabbage seed, 32; Carrot, 34; Cress, 39; plant Cucumbers, 40; sow Endive seed, 42; plant Indian Corn, 43; Melon, 46; Water Melon, 47; sow Mustard seed, 48; plant Nasturtiums, 48; Okra, 49; Pepper, 52; plant Peas, 54; Potatoes, 55; Potato, sweet, 56; Pumpkins, 56; sow Radish seed, 57; Sorrel, 66; plant New Zealand Spinach, 68; Squash and Tomato, 69. In the early part of this month, finish sowing all kinds of Aromatic, Pot, Sweet, and Medicinal Herbs, 79 and 81. Some of the old hot beds may be spawned for Mushrooms, but it is best to form new ones. Uncover productive beds once a week, and gather the produce; clear them of weeds and wet litter, and put a little dry hay or straw next the bed. Prepare fresh spawn, &c., 103 to 109; sow all kinds of Flower seeds in the early part of the month, 116 and 120; mow lawns and grass walks, destroy weeds, remove decayed plants, support tall flowering plants, 112; attend to green-house plants, and water them frequently.

Grape vines and other choice trained fruits should be attended to this month. Divest them of all useless and unhealthy shoots. If Apricot trees set too thick, the fruit should be thinned.

JUNE.

The principal sowing seasons for general crops may be considered as past, but there are many kinds of seeds which may be sown this month; and the gardener should ascertain the success of his former plantings, in order to make up any deficiencies from failures, before the season be too far advanced. By this time, some of the early crops will be cleared off, and such ground as was manured for the early crops of Lettuce, Radishes, Spinach, &c., will be excellent for late Beets and Carrots. Hoe and thin out all standing crops, and clean vacant ground, to prevent weeds from running to seed. If the ground be dry, frequent hoeing will be beneficial. Use means to destroy insects; read from page 4 to 10 for information on this subject. Plant Kidney Beans, 22; Beet seed, 24. If the seedling plants of Broccoli, Cauliflower, Cabbage, &c. failed last month, sow again early this month. Water the beds frequently, and sow tobacco dust, soot, ashes, &c., or use the liquid recommended, page 7. Transplant Cabbage, Celery, &c. for summer use; transplant Cardoons, 34; sow Carrot seed in drills, 34; plant Cucumber seed in hills, 40; sow Endive seed, 42; plant Indian Corn, 43; transplant Leeks, 44; plant Peas, soak them first five or six hours in water, 54; plant Potatoes, 55; Pumpkin seed, 56; sow Black Radish seed, 58; sow Ruta Baga, 72. As the herbs come into flower, they should be cut on a dry day, and spread in a shady place to dry for winter use, 81. Conduct Hop vines to the poles, and when they have reached the top, nip off the tops, to strengthen the stems, 75. Give frequent watering to the Flower beds; cut down dead flower stalks; remove decayed plants, and replace them with vigorous ones from the nursery bed, 112; transplant annual flower plants into the regular beds, and on the bulbous beds, 111 and 116. Trees on espaliers now require attention; cut off such superfluous shoots as are not required to be trained in, leaving well placed middle sized shoots, to supply the place of any old branches that may be thought neces-

sary to cut away. Grape vines should be looked over every week. Cut off all the tendrils and useless young shoots, and stop the shoots before the bunches of fruit. Train up the shoots for bearing next season, and to a proper length, before you stop them.

JULY.

This is a very important month for transplanting Cabbage Cardoon, Celery, Endive, Leek plants, &c. for full autumn crops. Prepare trenches for the Celery plants before-hand, in order that they may be ready to catch the rain. Leeks may be transplanted in dry weather by first steeping the roots in mud, and Cabbage plants too, if there be the least damp in the ground when its fresh turned over. If Cardoons or Celery be planted in dry weather, the trenches must be shaded with boards. As grub worms are generally numerous early in this month; plant with caution, try a few Cabbage plants first, and if none are eaten off you may venture to proceed, and by the middle of this month, the danger is generally over.

If Beets and Carrots have failed, the seed may produce good roots by autumn, if planted early in this month; plant Beans, 22; Cabbage seed may be sown now for Collards, 33; plant Cucumber seed for picklers, 40; sow Endive seed, and transplant the former sowing, 42; if Peas be planted now, they should be soaked in soft water five or six hours previous, 54; Potatoes may be planted early in this month, 55; and Pumpkins if not done last month. Sow black Spanish Radish seed in drills, 58; Sow Turnip rooted Cabbage seed or *Navet*, 33; This is a good season for *Ruta Baga* or Russian Turnip, 73; and the common kinds of Turnip seed may be sown towards the end of this month, 70. Attend to plantations of Hops, 75; whatever herbs may be required for winter use, should be cut off and dried as they come into flower, Burnet, Chervil, Fennel, Mint, Parsley, Sweet Marjorum, Tarragon, Thyme, Winter and Summer Savory, may all be cut this month.

The flower garden should be kept weeded and watered, and the seeds gathered as they ripen; apply neat rods to the tall growing and running kinds of plants; such hardy bulbs as may require to be removed, may be taken up as the tops wither, after which, the offsets may be parted off, and both these and the parent bulbs dried, for planting in autumn, 128; Roll gravel walks and attend to the lawns, edgings, &c., 112. Look over your fruit trees and grape vines; stop the shoots before the bunches of fruit, and train up such shoots as are reserved for bearing next year. Nip off curled and dead leaves and destroy insects.

AUGUST.

The planting season being nearly over, now is the time to hoe around the plants and clear the ground of weeds and stubble. Dig or plough vacant ground ready for fall Turnips, Spinach, Shallot, Fetticus, &c. As the ground for the latter crops may require manure, it will be greatly improved if ploughed before the manure is drawn on, which should be afterwards spread and ploughed under.

Plant Beans for picklers, 22; sow Cabbage seed for Collards, 33; earth up Cardoons, 34; do. Celery, 37; sow Corn Salad or Fetticus seed, 39; the early kinds of Cucumber may produce picklers if planted early in this month, 41; transplant Endive and prepare to blanch the early plantings, 42; Peas may be planted thus late if desired, 54; sow black Radish seed, 58; prepare for planting Shallots by the end of the month, 67; sow Turnip seed for full crops, 71; attend to such herbs as were not gathered last month, cut off and dry Sage, and other late herbs. Hops will be ripe this month; choose a dry season for gathering them and attend to them as directed, page 75; this is a good season for preparing to make Mushroom beds, in close sheds, cellars or pits; if the materials be collected this month, indigenous spawn may be collected next, but those that can procure spawn may make the beds at any time, or they

may pursue Mr. Nichols' plan, 107 ; continue to gather seeds of all kinds as they ripen and clear the ground ready for late crops of Spinach, &c.

If the weather be dry, such flowering shrubs as were planted in the spring should be watered occasionally. Cut down all decayed stalks as soon as the seed be gathered, and pull up annuals as they cease to flower. Mow grass walks and lawns, and attend to the edgings, &c. The Grapes against south walls will now be maturing fast ; look them over frequently, and stop the shoots that require it. If the weather be dry, trees planted in the spring preceding, should be watered, and such other trees as may be in very light ground.

SEPTEMBER.

Although the sowing season be nearly over, the crops on the ground require attention constantly. Endive may still be transplanted for winter use. Hoe Cabbage and other vegetables, and attend to the earthing of Celery as it progresses in growth. Sow Cauliflower seed, 29 ; Cabbage, 31 ; Corn Salad or Feticus, 39 ; Cress every ten days for a Salad ; sow Mustard, Rape, &c. for the same purpose ; sow Lettuce seed, 44 ; Onion to stand the winter, 50 ; Radish seed for fall use, 58 ; plant Shallots, 67 ; sow Spinach seed every week or ten days, 68 ; Turnips will sometimes come to maturity if the seeds be sown the early part of this month.

Continue to gather, dry and pack Hops as they ripen, 76 ; also all aromatic sweet and medicinal herbs, 81 ; this is a good season to make Mushroom beds in sheltered situations ; they may be spawned with indigenous or artificial spawn, as may be most convenient. For directions to preserve spawn, &c. see page 105.

This is a good season to increase all kinds of herbaceous plants by parting the roots ; and the perennial and biennial flower plants, raised from seed, may be planted in the flower borders in cloudy or wet weather, 121 ; flowering and evergreen shrubs may also be transplanted with care ; water them immediately after planting.

Plantations of Strawberries may be made this month, either with runners or seedling plants. Protect your Grapes and other fruit from wasps and other insects; either decoy them with honey or sugared water, or hang nets over them; some are at the expense of having the bunches put into crape or paper bags.

OCTOBER.

The principal winter crops being planted, it will be necessary to prepare for maturing and gathering some of the fall crops. Weed out Feticus, Spinach, &c. Hoe, and earth up Celery, do it in dry weather, and not even while the dew is on it, 37; Asparagus, Sea Kale Skirret, and Dill seed may be sown this month. Towards the end of the month, frames must be provided for the protection of Parsley, Lettuce, and of such Cabbage and Cauliflower plants as were raised from seed sown last month. Begin to dig and secure all kinds of vegetables soon enough to get the whole placed away before the end of the next month. Take up Potatoes and bury them in graves so as to secure them from wet and frost, or put them in a warm cellar. Proceed to take up other roots; begin with the tenderest kinds, or do that which is required to be done in dry weather while it is so. Collect Pumpkins and Winter Squashes, and expose them to the sun and air on a dry bench, or ledge, before they are stowed away. Dig up Beets and secure them in graves, or pack them in sand in a cellar.

Attend to the different kinds of herbs, 81; prune flowering shrubs, and make new plantations of them. Protect tender exotic plants in the early part of this month. Prune Gooseberry and Currant bushes, and make plantations of them, and Raspberries towards the end of the month.

All the old branches which produced fruit last summer, may now be cut out of your Raspberry plantations.

Prepare to plant all the hardy kinds of bulbous flow-

er roots, and take up, and secure, Dahlias, Tuberoses, and other tender roots, &c.

NOVEMBER.

Endeavour to avoid having your garden products frozen fast in the ground. Begin in good earnest to secure them; in fine weather dig up Beets, Carrots, and as many Parsnips, Skirret and Salsafy roots as will be required for winter use, and pack them close together in graves; give them a coat of straw, and afterwards heap on as much earth as will keep out the frost, or stow them in a cellar. Towards the end of the month Turnips may be secured in the same way. Take up Celery in dry weather, and strike it in close together against a ridge which should be previously formed in a straight line about a foot above the level of the surface; throw up earth from the trench sufficient to cover them about an inch, and then plant row after row as close and upright as it can be placed, with just sufficient earth between every row to keep the roots and stalks from touching each other. The whole being covered up with earth, some long dung or litter may be thrown over it sufficient to keep out the frost, and by heaping a good layer of manure against the last row of Celery, it may be taken out at any time in the winter for use. Some erect a board shed over to preserve it from wet, or a small quantity may be kept in a cellar. Cabbages must be taken up and laid in rows against a ridge, so as to form a square, compact, close growing bed, the roots and stems being buried up to the lower leaves of the Cabbages. The beds may be afterwards covered with straw, or a temporary shed may be erected over them. Cabbages will keep for some months in a cellar, if connected with their roots. For the management of Broccoli and Cauliflower, see pages 27 and 93. Borecole, Brussels Sprouts, and Collards, may be taken up and stowed away like Cabbages. Cardoons may be laid in like Celery, or preserved in sand in a cellar. Leeks may be taken up and laid in rows close

together against a ridge, and covered up as far as the lower leaves. If the last row be protected from frost by a coat of stable dung, they can be taken out when required for use. Corn Salad, Spinach, and Lettuce, may be protected by a covering of straw, salt hay, or cedar brush. For the management of Artichoke beds, see page 13; Asparagus, 17; Rhubarb, 60; Sea-Kale, 64.

Cover up flower beds with leaves, straw, or light litter. Plant Tulips, Hyacinths, and other bulbous flower roots, see page 123 to 130. Protect all tender plants. Hardy fruit trees may be planted this month; lay long litter round the roots of them, and also of the grape vines and other tender plants, trees, shrubs, &c.

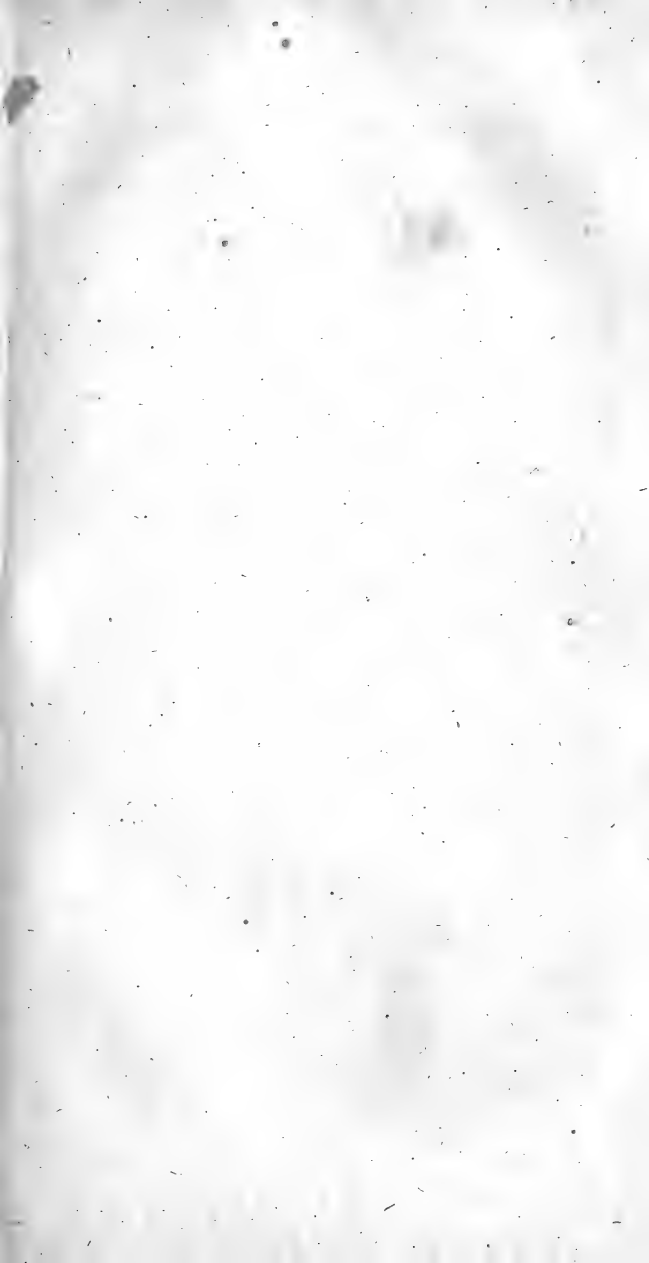
DECEMBER.

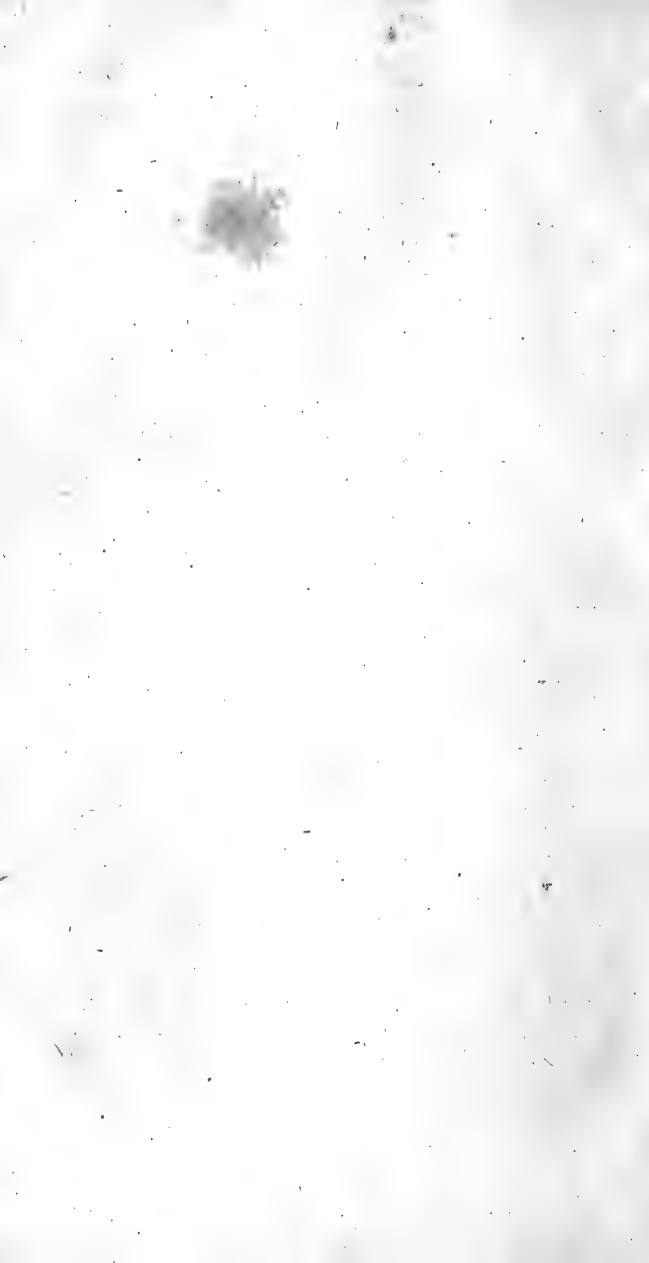
If all was not done as directed last month, there is now no time to be lost. Every thing that needs protection should now be attended to, and if the weather continues open, some of the ground may be ploughed or trenched, to receive the benefit of winter frosts. Collect all your pea sticks and bean poles together, and place them under cover to prevent their rotting. Turn over compost heaps, and provide manure for another year. Attend to Mushroom beds, and cover up bulbous and other roots with leaves or litter. All kinds of tender plants in pots should be set into frames or pits, and plunged in old tan or light mould, and in hard frosts, coverings of mats, straw, &c. may be laid over them.

Collect from heaths and rocks such kinds of earth as are suitable for different sorts of exotic plants, and gather leaves of trees of all sorts, and lay them in heaps. If you intend to make hot beds of them, they should be put together dry; but if you intend them for compost, they may be laid together as wet as possible. Protect the stems of new planted trees. Cover with litter the roots of grape vines and figs against walls, and cover the branches with mats, &c. Prune Apple, Pear, Quince, and other hardy fruit trees; cut out rotten and decaying

branches. To destroy insects on the fruit trees, and prevent them from creeping up and breeding on them, do as follows :

Take a strong knife with a sharp point, and a sharp hook-like iron made for the purpose ; with these scrape clean off all the moss and outside rough bark, and with the knife pick out or cut away cankered parts of the bark and of the wood, in such a slanting manner that water cannot lodge in the sides of the stems of the trees. Having cleared the trees in this manner, make up a mixture of lime, soot and sulphur ; put these ingredients into a pot or tub, pour boiling water upon them, and with a stick stir and mix them well together. When this strong mixture becomes cold, and about the thickness of white-wash, take a brush, dip it in the mixture, and apply it to the stems and the large branches of the trees, dabbing it well into the hollow parts of the bark. The pruning of hardy fruit trees and hardy shrubs may be performed at all favourable opportunities through the winter.





APPENDIX.

GENERAL OBSERVATIONS ON THE FRUIT GARDEN AND ORCHARD.

In my preliminary observations on the subjects I have hitherto treated on, I am aware that it may appear to some, that I have not sufficiently urged the importance of a judicious selection of situation, exposure, aspect, soil, &c. My object in not insisting on a strict attention to these important points was, because I know that, though good land is abundant in this extensive country, it is impossible for every one to choose for himself; and rather than any disadvantages in these respects, should discourage proprietors of land from attempting to raise garden products, so necessary to the comfort and convenience of every family, I have endeavoured to show them how to use to advantage whatever land may surround their places of abode. As however some have a choice, it may be necessary to offer some further remarks on the subject.

The situation of an Orchard or Fruit Garden should be one that has the advantage of a free circulation of air, and is well exposed to the south, also to incline a little to the east, and south-west. When the situation is low and close, the trees are very liable to become mossy, which always injures them by closing up the pores of the wood; they are also more liable to be af-

fectured by blight. Although having an Orchard closely pent up by trees, &c. is injurious, nevertheless a screen of forest trees, at such a distance from the fruit trees as that the latter will not be shaded by them, is of very great service in protecting the trees in spring from severe cold winds. A good strong loamy soil, not too retentive of moisture, to the depth of thirty inches or three feet, is most suitable for an Orchard. Great attention must be paid to the substratum so that the ground is well drained, for if the top soil be ever so good and the bottom be wet, it is a very rare case to find that the trees will prosper for many years, before they begin to be diseased and go to decay. As it is so indispensably necessary to the success of fruit trees that the bottom be dry, if it be not naturally so, it must be made so, by judicious draining.

When it is necessary to make the bottom dry by draining, it must be done for some time before the trees are to be planted. In performing this work, the ground must be trenched, and when the trench is open, stones or brick bats, &c. must be laid over the bottom to the thickness of six inches, a little coal ashes or small gravel must be sprinkled over the top of the stones, &c., and then the surface be gently rolled. Also drains may be made in different directions so that any excess of moisture can be taken entirely away from the ground.

It is well known to most cultivators that exposure of soils to the atmosphere greatly improves them, as is experienced by ridging and trenching. Where the soil is stiff and stubborn, small gravel, sand, coal ashes, lime, light animal and vegetable manure, and other light composts are very appropriate substances to be applied, and will if carefully and well worked into the ground soon bring it into a proper condition for most purposes.

Previous to laying out an Orchard or Fruit Garden, the soil should be manured and pulverized to a great depth. The soil should be sweet, that the nutriment which the roots receive may be wholesome; free, that

they may be at full liberty to range in quest of it ; and rich, that there may be no defect in food.

If Orchards be made from meadows or pasture lands, the ground should be improved as much as possible by manuring, trenching, ploughing, &c. If this is not done to its full extent, it should be done in strips of at least six feet in width along where the fruit trees are to be planted, and at the time of planting, let the holes be dug somewhat larger than is sufficient to admit the roots in their natural position, and of sufficient depth to allow of a foot of rich and well pulverized mould to be thrown in before the trees are planted. In planting fruit trees, they should be placed two or three inches deeper than they were in the nursery bed, and the earth intended for filling in, should be enriched and well pulverized by mixing in some good old manure, and if any leaves, decayed brush, rotten wood, potato tops, or other refuse of a farm be attainable, let such be used around the trees in filling, taking care that the best pulverized mould be admitted among the fine roots. The trees in planting should be kept at ease and several times shaken, so as to cause an equal distribution of the finer particles of earth to be connected with the small fibres of the roots ; and when completely levelled, let the ground be well trodden down and moderately watered, which should be repeated occasionally after spring planting, if the weather should prove dry.

As some difference of opinion exists among practical men as to the best time for planting fruit trees, the following extract from Mr. Prince's Treatise on Horticulture is submitted :

*“Seasons for transplanting—*Spring is the season when we find the most pleasure in making our rural improvements, and from this circumstance probably it has become the general season for planting trees, but experience has proved the Fall planting to be the most successful, especially in those parts of the United States which are subject to droughts, as the trees planted in autumn suffer little or none from drought when those

set out in Spring often perish in consequence of it. Notwithstanding, with regard to those fruits that have been originally brought from warmer climates, such as the Peach, Apricot, Nectarine, and Almond, which are natives of Persia, Armenia, &c., it is necessary for us to consult the operations of climate also; and, from a consideration of those attendant circumstances, I have come to the following conclusions. In localities south of New-York, the Fall season is preferable only for the Apple, Pear, Plum, Cherry, Quince, and all other trees of northern latitude; whereas the Spring is to be preferred for the Peach, Apricot, Nectarine and Almond, which for the reasons before stated, might, during severe winters, suffer from the intensity of the frosts. Still I do not mean to assert that trees of those kinds are certain to be injured by the winter, as in very many seasons they are not in the least affected; still they are exposed to vicissitudes which may or may not occur. Many gentlemen, however, of excellent judgment, make their plantations in the fall, which only serve to prove, that even in the most intelligent minds, a diversity of opinion exists.

“ *Trees, &c. on their arrival at the place of destination.*—As soon as the trees arrive at the place where they are to be planted, let a trench be dug in cultivated ground, the bundle unpacked, and the roots well wet, and immediately covered with earth in the trench, observing to make the earth fine that is spread over them, so as not to leave vacancies for the admission of air to dry the roots, it having been found by experience that the thriftiness of trees, the first year after transplanting depends much on the fine fibres of the roots being kept moist, and not suffered to dry from the time they are taken up until they are replanted; their increase, therefore, must depend principally on the subsequent management on their arrival at the place of destination: for if, when the bundles are unpacked, the trees are carelessly exposed to drying winds, the young fibres of the roots must perish, and the trees if they live at all, can-

not thrive the first season, as they can receive little or no nourishment until these fibres are replaced.

“ *To cause the trees to thrive*—The ground where they are planted must be kept cultivated; young trees will not thrive if the grass be permitted to form a sod around them, and if it should be necessary to plant them in grass grounds, care must be taken to keep the earth mellow and free from grass for three or four feet distant around them, and every autumn some well rotted manure should be dug in and around each tree, and every spring the bodies of the Apple, Pear, Plum, and Cherry Trees, and others that it is particularly desirable to promote the growth of, should be brushed over with common soft soap, undiluted with water; this treatment will give a thriftiness to the trees surpassing the expectation of any one who has not witnessed its effect. Should the first season after transplanting prove dry, regular watering will be necessary, as from neglect of proper attention in this respect, many lose a large portion of their trees during a drought.”

Such kinds of fruit trees treated upon in this work as may require any other than good ordinary soil may be supplied, by judicious management; and if a proper attention be paid to the situation and aspect in arranging a Fruit Garden, each kind may be so accommodated as to promote its fruit's ripening earlier or later than the ordinary season, by varying the aspect; but Grape Vines or other tender fruits should not be planted where the sun's influence does not fully operate.

Where there is a great extent of close fencing or wall, it is advisable to plant trees of the same kind against different aspects. Such as one or two May Duke Cherries against a south aspect, which will ripen earliest, next, against either an east or west, and lastly, against a north aspect; by observing this method with Dwarf Cherries, Plums, Goosberries, Currants, &c. the fruit will ripen in succession, and thus a supply of them is considerably lengthened. The early blooming fruit trees will sometimes need protection in warm aspects; for

which arrangements may be made by keeping awning, matting, netting, &c. at hand, to shelter them with in threatening weather, or to screen them from the intense heat of the sun after a frosty night ; this with a sprinkling of water, as the air gets warm, will often prevent any serious consequences from slight frost.

Those who may have various soils, should suit them to the different kinds of fruit. Apples and Pears require a strong loam, but rather the lightest for the Pear. Apricots, Cherries, Peaches, Plums, and Nectarines, a good deal lighter than for the Apple and Pear ; such fruits as may require peat, bog, or any other extraordinary kinds of earth, will be noticed as we proceed.

The following observations on Fruit Gardens are taken from the third volume of the New-York Farmer and Horticultural Repository. Article 190, page 225, communicated by an *Old Man* :

“ A *fruit garden* in this *free* country ought to be protected by nothing less formidable than a pale or picket fence. It is in vain to think of having good fruit in small quantities, unless the proprietor can control every thumb and finger within his grounds, so that his stone-fruit, more especially, may be fully ripe before it be removed from the tree. It is a fact, though it may not be generally known, that *such fruit is often considered ripe, and eaten, before it has attained one half of its finest flavour.*

A pale or picket fence is a great protection to a *fruit garden* ; for though some desperadoes may break through a few times in a season, it will effectually prevent the inroads of the small fry ; and it has another important advantage : there are men and grown boys whose *business* frequently leads them across lots, through Peach orchards, and directly under Pear trees, that stand in a common enclosure, but who are too cautious to scale a garden fence, because they have no *excuse* for appearing on the inside ; and these constitute a majority of the prowlers.

Further, *those who shoot into a garden at night, ge-*

nerally take aim in the day time. Prevent their observations, (this fence will in many cases prevent it,) and the temptation and danger will greatly be lessened. A good watch dog, however, is in all cases a valuable auxiliary.

There may be many causes why *fruit gardens* have not been more common among our independent farmers. I think that more would be done, however, were they better acquainted with fine fruit. To be fine, it must be well ripened; and the small part that the owner can get from a few small *Cherry trees*, (for instance,) warring amongst boys and birds, is seldom a fair specimen. Many such proprietors, though old men, have never eaten a ripe *May Duke*, or a ripe *black Tartarian*.

The importance of Apples, both for the dessert and for culinary purposes, is so generally admitted, that to do without them would be considered a great privation; yet one month in summer passes away with a great majority of the landholders, destitute of this luxury, while *the yellow harvest, the juneating, the summer rose*, and others, are dropping from the trees of the provident.

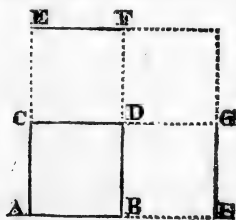
Of the *white promordian Plum, the preoce de Tours*, and other early kinds, it is enough to ask, who has tasted? and I should be unwilling to say that one in ten of our inland farmers had ever eaten an *Apricot* or a *Nectarine*. Summer Pears are of frequent occurrence, but of those delicious kinds that grace the dessert in winter, among many, even the existence is not known. I am not dealing in fiction.

And the *Apricot* is a fine fruit, too little known. (*Where?* I write with reference to a certain meridian, but the remark will serve without material error, as the almanac-makers say, for a region of hundreds of miles in extent.) Many varieties of this fruit are enumerated by nurserymen; and if not quite equal to the peach, remember! they ripen one month earlier, and help to fill a wide space in the circle of summer fruits. *The same climate that suits the Peach will mature them on standard trees in the open ground* I speak from the

experience of several years, and find them in every respect as hardy as the peach tree; neither are the blossoms more injured by vernal frosts. Like the Plum, the fruit is subject to the attacks of the curculio, and may be protected in the same manner. Under our bright and genial skies, it is to be regretted that we have known so little of this wholesome and delicious fruit.

The number of trees required in a *fruit garden* must depend on particular circumstances. Where the Peach tree flourishes, the Apricot, Quince, and Nectarine, (*that smooth skin Peach of peculiar flavour,*) should be added; but in a large part of the state of New-York, the chief dependence must be on Cherries, Plums, and Pears, including the earlier varieties of the Apple. A liberal allowance for unfavourable years should be made; and let the horticulturist remember, that "enough means a little more" (at one time than another.)

Another consideration in favour of a good sized garden may be presented; in squares, twice the length of fence, will enclose four times the quantity of ground.



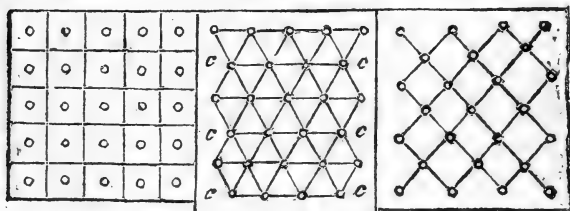
To make this plain, let A B C D contain half an acre—it may be too small. Move the fence C D to E F, and D B to G H. You have two acres; and the black lines show that half the fence is made.

At least three modes of arranging the trees have been adopted. One is to lay out the ground in connected equilateral triangles, and plant at the angles. *This places the trees more equally over the ground,* than some other plans, each tree, except those at the sides, standing in the centre of a hexagon, surrounded by six trees at equal distances. More trees will stand on a given piece of ground in this order, *with the same distance between the nearest trees,* than if planted in squares. In the latter form, each tree stands in the

centre of a square, surrounded by only four others at equal distances.

The advantage of the hexagonal form is overbalanced, however, in small enclosures, by unoccupied spaces at the sides, and the same objection applies to the quincunx. For this reason, I prefer planting in squares.

The annexed diagram of a garden 100 feet square, to be planted with trees 20 feet apart, and no tree nearer to the fence than 10 feet, will present a clear view of the subject.

*Square.**Hexagon.**Quincunx.*

In the square, we have 25 spaces of 400 square feet, each tree standing in the centre.

In the hexagon, or equilateral triangle, *ccc, ccc*, show unoccupied spaces. The lower row of trees is about 3 feet from the fence. If the enclosure be enlarged, by removing the side 7 feet out, it will then contain 27 trees.

To lay out the Quincunx, we want 105 feet square; (an addition of more than one tenth of the quantity first given,) and it then only contains 25 trees.

Some writers object to manuring fruit trees. I read one of these last season, just before I started with a friend on an excursion of nearly 100 miles through the country; and on passing the various farms, our attention was continually turned to the subject. We observed, without exception, that peach trees more especially, which received the wash of the cow-yard, were distinguishable by the deep green of their leaves, and

the greater size of the fruit: and the flavour of these was unquestionably finer than the peaches from trees with paler leaves. The juices in fruit undergo an additional *elaboration*; and eminent horticulturists have believed that no injurious effect is perceptible, even from such manures as taint the stalks and leaves of culinary vegetables.

In preparing to plant my FRUIT GARDEN, the holes were ordered to be dug six feet in diameter, and two feet in depth. The sub-soil was thrown back, and layers of potato tops, straw, &c. were covered with sods, or rich mould from the surface. Leaves and decaying brush from the woods would be a valuable addition. When treated in this manner, not only are the trees more likely to grow, but grow so much faster, that they come sooner into full bearing by several years. This is not all; the fruit will be finer in both size and flavour, and more especially in seasons of severe drought."

OBSERVATIONS ON INSECTS AND DISEASES TO WHICH FRUIT TREES ARE LIABLE.

Much may be written relative to the various diseases to which fruit trees are liable, and also to the prevention and destruction of the various kinds of reptiles and insects which very frequently deprive us of the first fruits of our garden. The preventive operations are those of the best culture. Fall ploughing, by exposing worms, grubs, the larvæ of bugs, beetles, &c., to the intense frost of our winters, and the moderate use of salt, lime, ashes, &c. are beneficial. Insects may be annoyed, and sometimes their complete destruction effected by the use of soap-suds, ley, tar, turpentine, sulphur, pepper, soot, decoctions of elder, walnut leaves, tobacco, and other bitter and acrid substances; but perhaps the most effectual way of keeping some of the most pernicious kinds of insects under, is to gather up such fruit as may

fall from the trees, before the insects have an opportunity of escaping into the earth, or to other places of shelter.

Where trees are planted in a bad soil or unfavourable situations, they often become diseased; when this happens, the best remedy is good pruning, and keeping the trees clean, by a free use of soap and water. If that will not do, they may be headed down, or removed to a better situation. Barrenness and disease are generally produced by the bad qualities of earth and air, by a want of water, or by the inroads of insects. These incidents generally show themselves in the early part of the year. Leaves and shoots of any colour but the natural green; curled and ragged leaves; branches in a decaying state; shoots growing from the roots, instead of from the stem or trunk; the stem diseased in its bark, and gum oozing from various parts thereof, are all proofs of the existence of disease.

The Peach tree is subject to a disease called the yellows; and the discoloured leaves and feeble branches are often ascribed to the worms which so frequently attack the root; where these are found, they may be removed by a knife or chisel; but if it should appear that the tree is diseased, it should be removed, to prevent other trees from being infected. The Pear, and also the Quince, and sometimes other trees, are subject to the fire blight; this malady may be completely checked on its first appearance, by cutting off and immediately burning the injured branches. Generally speaking, careful pruning, cleaning the bark all over with a brush, applying soap or tobacco water to the leaves, and occasionally putting good earth and good manure to the roots, will remedy most diseases in fruit trees; removing them from a bad to a better soil will, of course, effect this, where it proceeds from poorness of land; for the old adage, "remove the cause, and the effect will cease," will be here exemplified. To cure the oozing of the gum, nothing more is necessary than to cut away the diseased parts of the bark; and by thus assisting

nature in casting out the excrementations, or noxious juices, a complete cure may be effected. When a tree is affected by mildew, let it be immediately sprinkled with soap suds, and then be dusted over with sulphur and tobacco dust, or snuff; at the same time, dig around the tree, and examine the soil, and sub-soil; if it be wet and cankerly, it should be taken away, and replaced with good healthy soil, and the ground drained; if on the contrary, the ground be dry, give it a plentiful watering; the same remedy may serve as a preventive of the extension of blight, if taken in time. When any canker is observed, the part affected must, at the winter pruning, be cut clean out, and the part thus dressed be pared, so that no water be able to lodge in the wound; when this is done, let a quantity of soot be mixed up with the water, after which, let a little train oil be worked well amongst it, but so that the mixture finally remain stiff; this may be plastered over all the wounds that have been pruned. The application of this mixture keeps out the wet from the wounds, where it would be likely to lodge, and both the soot and oil promote vegetation. When trees are cankerly from having a bad sub-soil, it is in vain to apply any remedy till the ground is properly drained, and some fresh soil be mixed with the natural soil, also the tree replanted. When trees are known to be so situated as to be particularly liable to the attacks of insects or disease, they should be attended to at the time of winter pruning, in order to destroy the insects in their larvæ state. See page 164.

The following compositions have been known to protect fruit trees from the attacks of numerous insects, by being used as a wash to the trees immediately after the winter pruning. The constitution of some trees will bear a much stronger mixture of ingredients than others; but the proportions, as hereafter described, will not be injurious to any, but will be effectual in the destruction of the larvæ of insects.

For Apricot, Nectarine, and Peach Trees.—To 8 gallons of water add one pound of soft soap, 2 pounds of common sulphur, and half an ounce of black pepper.

For Apple, Cherry, Pear, and Plum Trees.—To 4 gallons of water add one pound of soft soap, 2 pounds of common sulphur, 2 ounces of tobacco, and one ounce of black pepper.

For Figs and Vines.—To 4 gallons of water add half a pound of soft soap, one pound of sulphur, and a quarter of an ounce of black pepper.

All these ingredients must be boiled together for 20 minutes at least, and when in a lukewarm state, applied to the bark of the trees with a suitable brush.

The most destructive enemy to our fruits, is the Curculio; this insect passes the winter in the earth in a chrysalis state, and if suffered to remain unmolested by the gardener, will be ready to commence his attacks at about the time the blossoms appear on our fruit trees. The eggs are deposited in the Apple, Pear, and all stone fruit, at a very early stage of their growth; these eggs soon hatch, and small maggots are produced, which exist in the fruit, causing it to drop off prematurely, with the little enemy within; if this fruit be gathered up, or immediately devoured by hogs, geese, or other animals, a check may be put to their ravages in succeeding years, but if suffered to remain on the ground, they will supply food to myriads of their destructive race, which may not be so easily extirpated. The canker-worm is another enemy to our fruits, for the destruction of which many experiments have been tried. Some apply bandages round the body of the tree, smeared over with tar or ointment, to annoy or entrap the females, in their ascent to the tree; but as these tormentors are frequently on the move from November to the end of June, this must be a very tedious, as well as uncertain process. As this insect is supposed to exist within four feet of the trunk of the tree, and not more than three or four inches from the surface of the earth, good culture, and a moderate use of lime, ashes, or any other pernicious ingredient, is the most likely way to destroy them. The Bark-Louse is another pernicious insect; they resemble blisters, and are so near the colour of bark as to be im-

perceptible ; they often prove fatal to the Apple tree, by preventing the circulation of the sap. These insects may be conquered by washing the trees with soap-suds, tobacco water, lime water, or brine, or a wash may be made of soapy water and lime, thickened to the consistence of cream or paint, with sifted sand or clay, which may be applied with a brush to the trunk and limbs of the trees ; this should be done at the latter end of May, or early in June, and the cracks in the bark should be completely covered.

The Apple tree Borer is said to deposit its eggs beneath the surface of the soil, and the worms are often to be found in the spring of the year, by digging round the tree, and clearing away the earth to the roots, and may be taken out with a knife or gouge and destroyed. After the worms are removed, the wounds should be covered over with grafting clay and wood ashes mixed, and the earth then returned to the roots of the tree. Some use bricklayers' mortar early in the spring, around the base of the tree, so as to cover the part where the deposit is made, and prevent their attacks.

Although our limits will not allow of a further description of the various sorts of insects which injure our gardens, and frequently destroy the first fruits of our labour, I cannot forbear directing the attention of our citizens to the importance of saving all kinds of ashes. If all agriculturists and horticulturists were to offer an inducement to the inhabitants of large cities to save their ashes in a dry state, they would be supplied not only with a valuable manure, but an antidote for many kinds of insects ; and our citizens would be at less risk from fire, by having a brick vault on the premises for safe keeping them. In England, a private dwelling is not considered complete without an ash vault, and a good farmer would dispense with his barn, rather than be destitute of an ash-house. I have known farmers supply the cottagers with as much peat as they could burn, on condition of their saving them the ashes ; and there are some that will keep men under pay throughout the year, burning

peat for the same purpose ; and any thing that has passed the fire is so valuable, that a chimney-sweep will frequently clean chimneys for the sake of the soot, which is conveyed miles into the country, and sold at a price sufficient to reward the collectors, besides paying all expenses ; even the house-keepers' ashes in cities is a marketable article at all times, at from ten to twenty-five cents per bushel, when kept dry and clean, and a guinea a load was formerly the common price in the villages in Berkshire and Hampshire.

While on this subject, I would urge the importance of a spring dressing of ashes. If cultivators were to prepare turfs from tanners' bark, peat, earth, coal dust, mixed with clay, cow dung, &c., and get them dried in the summer season, these, by being preserved through the winter, may be burned around fruit orchards, while the trees are in blossom, and if the fires are properly managed, a smoke may be kept up, by heaping on damp litter every night ; this will prove pernicious to such insects as may reside in the trees, and the ashes being spread on the ground, will serve as an antidote for the destruction of others. An Orchard thus managed every year, will need no other manure. The smoking should be effected first on one side of the plantation, and afterwards on the other, or heaps may be prepared in different parts of the Orchard, and fire applied according as the wind may serve, to carry the smoke where it is most necessary. I know a gardener in the neighbourhood of New-York, who saved his Plums and Nectarines by burning salt hay, after its having been used as a covering for his Spinach ; and I have no hesitation in recommending it as an excellent remedy for securing fruit trees from insects, especially if some coarse tobacco could be procured to add to it. The damper the materials are, in moderation, the more smoke they will create ; and if a little tar, pitch, sulphur, or other pernicious combustible be sprinkled amongst them, it will be beneficial. For further remarks on the destruction of in-

sects, the reader is referred to pages 7 and 8 of the general remarks on the management of the Kitchen Garden.

ON TRAINING AND PRUNING FRUIT TREES AND VINES.

In training and pruning fruit trees, particular attention is required. To supply a tree with a sufficiency of vegetable juices, there must necessarily be living bark and wood, in an uninterrupted succession from the root to the extremities of the branches; pruning therefore is useful to remedy any defect, as well as to take off superfluous wood and prevent unnecessary waste of the sap. Pruning may be performed at different seasons of the year according to the kinds of fruit, which will be shewn under each head, as we proceed.

In the Spring, or Summer pruning, be careful not to destroy the germs of future fruits; but merely remove all unserviceable sprays. In the winter season, make your selection from the wood shoots of the preceding year; keep those which appear the most healthy, and cut away those which seem redundant. Beginners had better prefer the Spring, as the buds will then be a guide for them to go by; but this business must not be delayed too late in the season, as some kinds of trees and vines are apt to bleed from being pruned untimely. When the sap rises in Grape Vines, &c. before the wound is healed, bleeding ensues, and is not easily stopped. When this happens, sear the place, and cover it with melted wax, or with warm pitch spread upon a piece of bladder; or peel off the outside bark to some distance from the place; and then press into the pores of the wood a composition of pounded chalk and tar, mixed to the consistence of putty. Vines will bleed in autumn as well as in spring, though not so copiously at the former season. The best preventive is timeous or early pruning in the Spring; and not pruning until

the wood is thoroughly ripe in autumn. With respect to the manner in which vines, and some particular kinds of trees should be trained, opinions are at variance. Some advise training the shoots in a straight and direct manner, others in a horizontal manner, and others in a serpentine form, &c. If vines be trained on low walls or trellises, the horizontal or zigzag manner of training may be adopted. Horizontal training is that in which from a main stem, lateral branches are led out horizontally on each side.

It has been remarked that in order to be a good trainer of vines, a man must have some forethought, and be capable of making his selection, as the plants shoot. He must predetermine how he shall prune, and where he shall cut at the end of the season; and so as it were, fashion the plants to his mind. He has this more effectually in his power, with respect to the vine, than any other fruit tree, on account of its rapid growth and docility.

By attending to the proper pruning of fruit trees in the winter, every advantage is promoted, and by a judicious management in other respects, wood may not only be obtained but preserved in every part of the tree, and so that it will bear down to the very bole, which will evidently be greatly to the credit of the gardener, the benefit of the proprietor, and will be equally conducive to the beauty and welfare of the tree. While trees are young, it is necessary to lay a good foundation for a supply of bearing wood in future years, for when this is neglected, and they become naked, it is some time before a supply can be recovered. In shortening a branch, always take care to cut in a direction a little sloping, and so that the slope may be parallel in a contrary way to the nearest bud left. It is requisite to have a very sharp knife, that the cut may not be ragged, but clean, and in the operation, must be careful that the knife does not slip, so that any other branch be cut or damaged. The general pruning of fruit trees is indifferently performed by many persons at any time from

autumn to spring, and it may be done so without any great injury to them providing that mild weather is chosen for the purpose, and the wood is well ripened. Although it may be advantageous to prune trees early in the winter when the wood is well ripened, yet when the wood is green and the buds are not arrived at a mature state, it is requisite in such instances to defer pruning until spring, taking care however that it is performed before the moving of the sap. The necessity of this arises from the circumstance, that as the wood is not ripened in autumn, the sap is then in an active state, and will continue so until the frost, &c. causes it to become stagnant, and if the shoots were shortened whilst the sap was in motion, the buds would be considerably injured and the tree weakened. Such unripe shoots are also more liable to suffer by the severity of winter, and when the pruning is deferred until Spring, all such parts as may have been affected by the weather, can be removed to the extent to which the damage has been sustained. As the pruning of such unripe wood in the autumn would be injurious, so it frequently is when it is done during winter, and the more so, according to the severity of it. Because, whenever a cut is made on such green wood, the frost generally affects it, as the sap is not dense, nor the wood so firm, as to be able to resist its intenseness. Whatever method is adopted in training trees, care should be taken to keep the two sides as nearly equal as possible; this may easily be done whether they are trained in the fan, or horizontal method.

For espalier trees the horizontal method has many advantages over any other; the small compass in which the trees are obliged to be kept requires such a direction for the branches, in order to make them fructiferous. And were very high trellises formed, so as to admit of the trees being trained in the fan method, such would be very objectionable by reason of the shade they would cause, and the trees would also be deprived of the benefit of a warmer temperature, which those less elevated

receive, by the effects of which fruitfulness is considerably promoted.

As some young gardeners may not know what is meant by *espaliers*, it may be necessary to explain, that, *espaliers* are hedges of fruit trees, which are trained up regularly to a frame or trellis of wood work; they produce large fruit plentifully, without taking up much room, and may be planted in the Kitchen Garden without much inconvenience to its other products. For *espalier* fruit trees in the open ground a trellis is absolutely necessary, and may either be formed of common stakes or poles, or of regular joinery work, according to taste or fancy.

The following article is selected as appropriate to our subject, from the fourth volume of the New-York Farmer and Horticultural Repository, No. 1, page 3, communicated by that enterprising Horticulturist, J. Buel, Esq., of the Albany Nursery, and entitled, Hints on Pruning :

The principal objects of pruning, are to procure a good bole or trunk for timber; to form a proper head for the production of fruit; and to subserve the purposes of ornament.

To effect these objects with the least trouble and greatest advantage, upon all non-resinous trees, the following rules are recommended :

1st. Begin to prune the tree when it is young.

2d. Cut close and smooth to the bole or limb.

3d. Cut, when small, the branches which are likely to interfere, or become useless, and which, if suffered to remain, will require to be removed at a more advanced period of growth.

4th. Do not trim to excess. Let the branches occupy, *at least*, a third of the entire height of a tree.

5th. Do not prune when the tree bleeds.

Where the preceding suggestions are observed, we may add—

6th. Prune in summer.

I proceed to offer my reasons for the rules here recommended, and

First. The food required to nourish the lateral useless branches, will go to increase the diameter and height of the plant, or swell the fruit, if these are judiciously removed. But a main consideration is, that the excision of small branches causes only small wounds, and small wounds speedily heal. The observance of this rule, therefore, facilitates growth, promotes health, and ultimately saves labour.

Secondly. This rule needs very little argument to enforce its propriety, as every observer must have frequently seen and lamented the ruinous effects of an opposite practice. The snags either send out useless sprays, or, deprived of the feeble aid of these, they die and rot, and carry disease into the bole, and are thus often the cause of the premature loss of the entire tree. If cut close, the enlargement of the living wood soon covers the wound. In large branches, where the saw must be used, the healing process is greatly facilitated, by paring the cut, particularly the exterior edges, with the pruning-knife; and it is a good precaution, before you use the saw, to notch under the intended cut, to prevent tearing the bark when the limb falls. In extirpating sprouts from the roots, and neither they nor those growing from the bole should be suffered long to remain, the like precaution of cutting close should be observed; for which purpose, it is necessary first to remove the earth from about the collar, with the spade or other instrument.

Thirdly. The reasons for pruning a tree while young, apply here: it is easier to cut small than large limbs, and the wounds of the former soonest heal. But the question presents, what limbs are to be cut? Generally all that are likely to cross each other, all feeble sprays, the strongest on the bole, and the weakest in the lop; for while the trees are in the nursery, I think it serviceable to leave a few scattering laterals upon the bole, and it is beneficial, at all ages, to thin most kinds in the lop. Yet

the answer to the inquiry will depend principally upon the species of tree, and the design of the planter. If his object be timber, the leading shoot should be feathered up in a spiral form, and all other shoots likely to interfere with its growth, be cut away. If the object be fruit, beauty and utility are to be consulted, and these are seldom incompatible in the eyes of a fruit-grower, for with him productiveness constitutes beauty. If ornament be the main consideration, no special directions can be given, as the species employed, the location, and the taste and fancy of the planter, will have a controlling influence. The rule for timber trees will not apply to either those destined for fruit or ornament.

In orchard and garden fruit, generally, the endeavour should be to obtain a low and spreading top. When a clean bole is obtained to a sufficient height, say in the orchard, of seven or eight feet, and in the garden, according to fancy, the leading shoot should be cut in, and three or more arms or branches left to form the head; which, when the habit of the tree will permit it, should be pruned so as to give it a besom form, or that of a broom divested of its centre. Several advantages arise from this and a more expanded form. It admits the air and sun more freely, to mature the fruit and wood; it renders the tree less liable to be blown down; it facilitates the gathering of the fruit, and the pruning of the tree. But the principal advantage consists in its tendency to increase oviparous or fruit buds, and consequently to augment the fruit. A great growth of wood seems to be incompatible with a great crop of fruit, and vice versa. A cow which gives much milk seldom takes on much flesh during the milking season. If the secreted food is converted into milk and fruit, there can be but little reasonable hope of its adding to the flesh of the animal, or the wood of the vegetable. Erect branches produce most wood buds, horizontal branches the most fruit buds. Straight limbs produce less fruit than those that are curved or crooked. Whatever retards or diminishes the flow of elaborated sap, in a healthy

tree, is favourable to the production of fruit. Hence wall trees, whose limbs are trained in the form of a fan, or in a horizontal direction, fruit better than those that grow upright as standards. Hence young trees are more apt to show blossoms the first and second year after transplanting, than in the two subsequent years. Pomologists have endeavoured to render this law of vegetation subservient to their interests, by adopting artificial means for inducing the production of fruit buds. These means consist in ring-barking, transplanting, cutting the roots, training, pruning, &c. The Pears in the Caledonian Horticultural gardens are trained *en quenouille*, that is, the lateral branches are cut in to a short distance of the main stem, and kept so, and the fruit is produced on the spurs growing from these shortened branches. In the Horticultural garden of London, the limbs of the Pear are tied down in a drooping position, resembling somewhat in appearance the weeping willow. The vines cultivated at Thomery, celebrated for their superior fruit, are planted eighteen inches apart, trained in the form of a T, the top horizontally, and restricted in their growth to four feet from the main stem. In this way a trellice of eight feet long, and eight feet high, is sufficient for five vines, which produce upon an average 320 bunches of fruit. These modes of training have a common object, that of restricting the growth of wood, and producing an increase of fruit. Those who wish to examine the modes of training here spoken of, in detail, are referred to Loudon's *Gardener's Magazine*.

Fourthly. Leaves are as necessary in the economy of vegetation as roots. The sap must be elaborated in these before it can be transmuted into wood, bark, or fruit. A tree cannot thrive, therefore, when these organs are either deficient or diseased. If sufficient leaves, or branches to produce them, are not left to concoct, or digest the sap which is propelled from the roots, the tree, to use a modern term, but a just comparison, becomes *dyspeptic*, the vegetable blood is vitiated, the

wood loses its texture, and a stunted growth, or premature death generally ensues. Hence great precaution should be used against excessive pruning.

Fifthly. To prune when the tree bleeds, tends to debilitate, by wasting what is designed as food for the tree. I have known it fatal to the vine. What is termed bleeding, is the flowing of the sap from wounds before it has been converted into aliment. This sap flows most freely while the buds are swelling, and until the leaves are fully capable of discharging their office, as is strongly instanced in the maple, birch, &c. Our orchards are generally pruned in March, which is probably the most unfavourable month in the year for this operation.

Sixthly. The advantages of summer pruning are, that the tree being then in vigorous growth, the wounds heal speedily; and the sap being concocted and thick, does not flow from the wounds, and thereby impair the health of the plant. Summer pruning should not be performed, however, before July, when the new growth has considerably advanced. It may be well to add, as this suggestion may seem unsound, that summer pruning is recommended by the best authorities. "As a general rule," says Pontey, "summer is preferable to winter pruning;" and Sang suspends pruning "from the beginning of February to the middle of July, but carries it on during every other month of the year."*

In regard to evergreens, which with us are confined principally to resinous trees, it is the general practice of nursery-men, and I think it a judicious one, not to prune them till they have acquired some years' growth, and then but sparingly and at long intervals, displacing two

* The Gardener's Magazine for October, has a communication from John Bowers, recommending summer as having a decided preference. The growth of trees thus pruned, he says, far exceeds that of the winter pruned. He commenced the practice in 1826, when his trees were six feet high; and in the autumn of 1829, they were 20 feet. He has this year summer-pruned 100 acres of young plantations, which in August were stated to be remarkably thriving and healthy.

or three tiers of the lower branches every two or three years. Monteith says "never cut off a branch till it has begun to rot, as the bleeding of a live branch will go far to kill the tree."

The implements employed in pruning, and the manner of using them, are matters of moment. If the operation is commenced when the tree is young, and judiciously followed up, a good knife, a small saw, and a chisel fixed on a six foot handle, to trim the tops and extremities of the branches, are all the tools that are required. A large saw will be occasionally wanted; but an axe or hatchet should never be employed, as they fracture the wood, bruise and tear the bark, and disfigure the tree.

In preparing the following articles, the object has been to furnish such information as was thought best calculated to entertain, as well as to instruct the readers. Besides the authorities quoted, I have gleaned from those inexhaustible treasures to Horticulturists, Loudon's Encyclopædia of Plants, and that of Gardening; but on account of the brevity necessarily observed throughout this work, it has been found impracticable to give many entire extracts; suffice it to say, that the historical facts are generally collected from these sources.

APPLE. POMMIER. *Pyrus malus*.

The Apple being so closely connected with our wants and enjoyments, is entitled to the first notice in the catalogue of our fruits. The Apple orchard is in truth the vineyard of our country; and the delicious beverage that can be obtained from some of the varieties of this excellent fruit being calculated to cheer the invalid, as well as strengthen the healthy, entitles it to high consideration. It is one of our oldest species of fruit, and has become completely naturalized to our soil; none

can be brought to so high a degree of perfection with so little trouble ; and of no other are there so many excellent varieties in general cultivation, calculated for almost every soil, situation, and climate, which our country affords. The Apple tree is supposed by some to attain a great age : Haller mentions some trees in Herefordshire, England, that attained a thousand years, and were highly prolific ; but Knight considers two hundred years as the ordinary duration of a healthy tree, grafted on a crab stock, and planted in a strong tenacious soil. Speechly mentions a tree in an orchard at Burton-joice, near Nottingham, of about sixty years old, with branches extending from seven to nine yards round the bole, which in 1792 produced upwards of two hundred gallons of apples.

The Romans had only twenty-two varieties in Pliny's time. There are upwards of fifteen hundred now cultivated in the garden of the Horticultural Society of London, under name ; the catalogue of the Linnæan Botanic Garden at Flushing, contains over four hundred ; and one of our enterprising horticulturists, Mr. Wm. Coxe, of Burlington, New-Jersey, enumerated one hundred and thirty-three kinds, cultivated in the United States, some years ago. They are usually divided into dessert, baking and cider fruits ; the first high flavored, the second such as fall or become mellow in baking or boiling, and the third austere, and generally fruit of small size. Besides this division, Apples are classed as pippins or seedlings, pearmains or somewhat pear-shaped fruits, rennets or queen-specked fruits, calvilles or white skinned fruits, russets or brown fruits, codlings or falling fruits, and burknots, which last grow readily by cuttings.

The Apple may be propagated by layers, and many sorts by cuttings and budding, but the usual mode is by grafting on seedling stocks of two or three years growth, and for dwarfing on stocks of the Quince or Paradise Apple. All the principal varieties are cultivated as standards, in the orchard, and should be planted from

thirty to forty feet from each other, or from any other spreading trees, in order that the sun and air may have its due influence in maturing the fruit.

Many of the dwarf kinds may be introduced into the Kitchen Garden, and trained as espaliers or dwarf standards. An Apple orchard may be planted at any time after the trees are two years old from the graft; and as trees from young stocks will not come into full bearing until ten or twelve years old, they will bear removing with care at any time within that period.

Old Apple trees may be grafted with superior varieties by being headed down to standard height; in very old subjects, most commonly, the branches only are cut over within a foot or two of the trunk, and then grafted in the crown or cleft manner. In all the varieties of the common Apple, the mode of bearing is upon small terminal and lateral spurs, or short robust shoots, from half an inch to two inches long, which spring from the younger branches of two or more years growth, appearing first at the extremity, and extending gradually to the side: the same bearing branches and fruit spurs continue many years fruitful.

Pruning.—As from the mode of bearing, Apple trees do not admit of shortening in the general bearers, it should only be practised in extraordinary cases. If trees have not the most desirable form when three or four years old, they should be judiciously pruned to promote regular spreading branches. In annual pruning, the main branches should not be cut unless in cases of decay; but all superfluous cross branches and dead wood should be taken out, and the suckers eradicated. Espaliers require a Summer and Winter pruning.

APRICOT. ABRICOTIER. *Prunus Armeniaca*.

The fruit of the Apricot is next in esteem to the Peach, and as it ripens three or four weeks earlier, should be more generally cultivated. The flowers appear in April, on the shoots of the preceding year, and on spurs of two or more years growth, and the fruit ripens in July and August. The London Horticultural Society's catalogue describes fifty-four sorts, and Messrs. Prince have forty-four in their catalogue; besides these, is the Peach Apricot, a large fruit, supposed to be a hybrid between a Peach and an Apricot.

Our enterprising fellow citizen, Mr. Wm. Shaw, succeeds every year in maturing large quantities of this excellent fruit; he ripens some on standards, but they succeed best when trained against close fences. In England some of the varieties are cultivated as standards, and espaliers; they seldom bear much fruit under ten or twelve years; but then the fruit is abundant and of the finest flavour. They are commonly cultivated as wall trees, in an East or West aspect; for if they are planted full South, the great heat causes them to be mealy before they are eatable. New varieties are procured from seed, as in the peach, and approved sorts are perpetuated by budding on Plum stocks, &c.

The varieties of the Apricot, in general, bear chiefly upon the young shoots of last year, and casually upon small spurs rising on the two or three years old fruit branches. The Moor Park bears chiefly on the last year's shoots, and on close spurs formed on the two year old wood. The bearing shoots emit the blossom buds immediately from the eyes along the sides, and the buds have a round and swelling appearance.

Apricot trees may be planted at any time after the head is formed: some head them down in the nursery bed, and remove them to their destined places when five or six years old.

Standards will require only occasional pruning to regulate such branches as may be too numerous, too

extended or cross formed, and to remove any casually unfruitful parts and dead wood; but the regular branches, forming the head of the tree, should not be shortened unless necessary.

The general culture of the wall Apricots comprehends a Summer and Winter course of regulation, by pruning and training. The fan method is generally adopted, but some prefer training horizontally. With young trees some contrive to fill the wall by heading down twice a year.

The Winter or early Spring management comprehends a general regulation both of the last year's shoots and the older branches. A general supply of the most regular situated young shoots must be every where retained, for successional bearers the ensuing year. Cut out such branches as are not furnished with competent supplies of young wood, or with fruit spurs, to make room for training a general supply of the most promising branches retained. Generally observe in this pruning to retain one leading shoot at the end of each branch: either a naturally placed terminal, or one formed by cutting (where a vacancy is to be furnished) into a proper leader. Let the shoots retained for bearers be moderately shortened: reduce strong shoots in the least proportioned—cutting off one fourth or less of their length; from weak shoots take away a third, and sometimes a half. This shortening will conduce to the production of a competency of lateral shoots the ensuing Summer, from the lower and middle placed eyes; whereas without it, the new shoots would proceed mostly from the top, and leave the under part of the principal branches naked, and the lower and middle parts of the tree unfurnished with proper supplies of bearing wood. Never prune below all the blossom buds, except to provide wood, in which case cut nearer to the origin of the branch. As, in these trees, small fruit spurs, an inch or two long, often appear on some of the two or three year's branches furnished with blossom buds, these spurs should generally be retained for bearing. As each

tree is pruned, nail it, laying in the branches and shoots from three to six inches distance, straight and close to the fence or wall.

The Summer pruning is principally to regulate the young shoots, of the same year. In the first place, take off close all the irregular foremost shoots, taking care to retain a competent supply of choice, side shoots, with a good leader to each parent branch. Continue these mostly at full length all the Summer, regularly trained in, to procure a sufficiency to choose from in the general Winter pruning, for new bearers the next year.

If the Summer regulation commences early, while the shoots are quite young, and, as it were, herbaceous, those improper to retain may be detached with the finger and thumb; but when of firmer growth, they must be removed with the knife. If any very strong shoots rise in any part where the wood is deficient, they may be topped in June, which will cause them to produce several laterals the same year, eligible for training in, to supply the vacancy.

Sometimes the fruit is much too numerous, if not attacked by insects, often growing in clusters; in which case thin them while in a young green state, leaving the most prominent fruit singly, at three or four inches distance, or from about two to six on the respective shoots, according to their strength. The Apricots so thinned off, and the first principal green fruit are very fine for tarts.

ALMOND. AMANDIER. *Amygdalus*.

Although Almonds are not much cultivated in this part of our country, they are entitled to notice. The species are fruit trees, or ornamental trees and shrubs, both much esteemed for the gay colour and early appearance of their flowers; these vary in their colour from the fine blush of the Apple blossom to a snowy

whiteness. The chief obvious distinction is in the fruit which is flatter, with a coriaceous covering, instead of the rich pulp of the Peach and Nectarine, opening spontaneously when the kernel is ripe. It is a native of Barbary, China, and most eastern countries. There are twenty-one sorts described in the catalogue of the Linnæan Botanic Garden at Flushing; some of which are represented as new kinds from France and Italy; where they are cultivated extensively for their fruit.

In France, they have above a dozen species or varieties, besides a hybrid called the Almond Peach. The common and bitter Almond are only to be distinguished by the taste of the kernels of their fruit; which is the only part used. The tender shelled is in the greatest esteem; and next, the sweet and jordan. The bitter cuticle or skin of Almonds is taken off by immersion in boiling water.

The sweet Almond and other varieties are used as a dessert in a green or imperfectly ripe, and also in a ripe or dried state. They are much used in cookery, confectionary, perfumery and medicine.

The Almond is propagated by seed, for varieties, or for stocks; and by budding on its own or on Plum stocks, for continuing varieties. The Almond tree bears chiefly on the young wood of the previous year, and in part upon small spurs or minor branches; it is therefore pruned like the Apricot and Peach, and its culture in other respects is the same.

BERBERRY. VINETIER OU EPINE VINETTE. *Berberis*.

The *Berberis vulgaris* is at once an ornamental shrub, a fruit tree, a hedge plant, a dye and a drug. There are several species or varieties indigenous in Europe, China and America. The shrub is branchy and prickly, rising to the height of eight or ten feet, with ash

coloured bark, yellow inside. The flowers appear in pendulous racemes towards the end of the branches; the berries at first green. The most esteemed varieties for their fruit, are the following: 1. Red Berberry, without stones, which has an agreeable flavour when full ripe. It is only found without stones when the plant has attained considerable age, and is on a poor soil. 2. Pale fruited Berberry. 3. White fruited. 4. Black sweet, which is the tenderest of them, and will bear the heat better than some other kinds. There are also some kinds with purple coloured fruit, and some with yellow. The common red with stones is planted more for ornament than use, on account of its beautiful red berries. The berries of *Berberis Canadensis* are spherical.

The bunches of fruit of the common Berberry are well known as affording an excellent sweet-meat when preserved in sugar. The qualities of the different varieties enumerated are probably of equal merit in point of flavour, but the fruit is materially different in appearance. It ripens gradually from August to October. The sweet sort is a native of Austria. All the varieties are propagated commonly by suckers, also by cuttings and layers of the young branches, and occasionally by grafting; the common red is also raised by seed; each of which methods of propagating may be performed in the spring; that by suckers and layers may be effected also in autumn.

The Berberry produces its fruit at the sides of the branches in small loose bunches, it bears both on young and old wood, chiefly towards the extremities. The branches should not be shortened in pruning, except the design be to force out new wood; permit the head to extend freely; and give only occasional pruning, to keep it in a pretty round form, open in the middle; cutting out weak, superfluous, crossing, and decayed branches; reduce all long ramblers and low stragglers, also lateral shoots on the stem, and eradicate all root suckers.

Sir J. Banks, in his treatise on blight, states that “the *Puccinia*, a fungus which closes up the epidermis of the leaves of grain crops, and appears on the surface like rust is generated by the *Æcidium berberides*, an insect which inhabits the Berberry; if this be correct, the plant is not desirable to the farmer. It is however much cultivated in Europe, for the sake of the fruit, which is pickled and used for garnishing dishes; and being boiled with sugar, forms a most agreeable sweet-meat or jelly; they are used likewise in sugar-plums or comfits. As a medicine the fruit is considered a mild restraining acid, agreeable to the stomach, and of efficacy (like other vegetable acids) in hot bilious disorders, and in a putrid disposition of the humours. The roots boiled in a ley, yield a yellow colour—and in Poland they dye leather of a fine yellow, with the bark of the root; and with the assistance of allum the inner bark of the stems also will dye linen of a fine yellow colour.”

CHERRY. CERISIER, &c. *Prunus cerasus*.

The Cherry of the cultivated varieties is said to have been first introduced into Italy, in the year 73, from a town in Pontus, in Asia, called Cerasus, whence its specific name; and it was introduced into Britain one hundred and twenty years afterwards.

The Romans had eight varieties of Cherries, red, black, tender fleshed, hard fleshed, small bitter flavoured and dwarf sort. There are now upwards of two hundred in cultivation. The French divide their Cherries into *griottes*, or tender fleshed; *bigareaux* or heart fleshed; and *guignes* or small fruits. The fruit of many varieties is somewhat heart shaped, whence they are called ox heart, white heart, black heart, &c.; why some sorts are called dukes is not so obvious. The morello cherry is very different from the other varieties, bearing almost exclusively from the preceding years

wood, and the pulp of the fruit having the consistence and flavour of the fungi called morel; whence the name. The Chinese Cherry is valuable on account of its bearing an excellent fruit, and producing it abundantly in forcing houses.

Cherries are grafted or budded on seedlings from Cherry stones, and from seedlings of the red and black mazzard. For dwarfing, they are worked on the morello, or perfumed Cherry; the latter is preferred in Holland.

Cherry trees in general, produce the fruit upon small spurs or studs, from half an inch to two inches in length, which proceed from the sides and ends of the two year, three year, and older branches, and as new spurs continue shooting from the extreme parts, it is a maxim in pruning both standards and espaliers, &c., not to shorten the bearing branches where there is room for their regular extension.

The morello is in some degree an exception, as it bears principally on the shoots of the preceding year, the fruit proceeding immediately from the eyes of the shoots; and bears but casually, and in a small degree on close spurs formed on the two year old wood, and scarcely ever on wood of the third year, therefore, in pruning, leave a supply of young shoots on all the branches from the origin to the extremity of the tree, for next year's bearers.

All kinds of Cherry trees except the morello are apt to grow very tall; to remedy this, and to enable them to form handsome heads, the leading shoot should be cut off when about three years growth from the bud; after which give only occasional pruning, to reform or remove any casual irregularity from cross placed or very crowded branches; and take away all cankerly and decayed wood.

Dwarf Cherry trees may be introduced into the Kitchen Garden, and trained as espaliers, &c. When morellos are planted in an orchard, they may be placed from fifteen to twenty feet apart; trees of the duke

kind may be planted from twenty-five to thirty feet apart ; and the heart shaped, in general, will require to be from thirty to forty feet from each other, or from any other spreading trees.

Cherry Trees may be removed the first year after the bud is established ; but they will bear removing at any time before they come into bearing, which is about the fifth year.

“ The gum which exudes from Cherry trees is equal to gum arabic ; and Hasselquist relates, that more than one hundred men, during a siege, were kept alive for nearly two months, without any other sustenance than a little of this gum taken sometimes into the mouth, and suffered gradually to dissolve.” The wood is hard and tough, and used by the turner and cabinet maker.

CHESTNUT. CHATAIGNER. *Castanea*.

The Chestnut is well known as a large tree, spreading its branches finely on every side where it has room, but, planted closely, will shoot up straight to a great height. It is supposed to have been originally from Sardis. It is so common as to be considered a native of France and Italy ; and some consider it as naturalized in England ; it is also indigenous in America. The London catalogue contains the names of thirty-two sorts under cultivation. The Chestnut is like the Walnut, both a timber and fruit tree ; some of the oldest trees in the world are of this species. The American Chestnut differs so little from the European, that no specific distinction can be drawn. It is one of the largest trees of the forest, the wood being extremely durable, and in high esteem for posts and rails to construct fences ; and the nuts are very delicious. The *Castanea pumila* or Chinquapin nut, is a small tree, or rather shrub, growing to the height of thirty feet in the Southern States, but seldom exceeding ten in cold

latitudes; the fruit is very sweet and agreeable to eat.

There is a variety with striped leaves, which is very ornamental. The most esteemed of the French kinds are called marron. Some excellent fruit bearing varieties are cultivated in England, France, Italy and Spain, as also in other parts of Europe; these are increased by grafting or budding in the usual methods, but the plants for coppice woods, or timber are best raised from nuts. Some varieties ripen their fruit a few days earlier than others, but none of these have been fixed on, or perpetuated by nurserymen, so as to be rendered available by purchasers. The fruit is a desirable nut for autumn and winter, and is eaten roasted, with salt, and sometimes raw; and in some countries it is not only boiled and roasted, but ground into meal; and puddings, cakes and bread are made from it.

CRANBERRY. CANNEBERGE. *Oxycoccus*.

This genus of plants is well distinguished from the *Vaccinium* or Whortleberry, by the narrow revolute segments of corolla; and are pretty little trailing evergreen plants to which a peat soil and rather a moist situation are absolutely necessary; they are very little changed by culture.

The *Oxycoccus macrocarpus* is a red acid fruit, highly valued as a sweetmeat or for tarts. It is well known that this excellent fruit grows in many parts of our country spontaneously; and that the mere gathering it, is all that bountiful nature requires at our hands; but it is well worth cultivating where there are none. This fruit will keep a whole year, if properly preserved in close covered stone jars, and is considered, by many, as superior to the best currant jelly, and may be kept for many months in a raw state without injury.

The *Oxycoccus palustris*, bears edible berries which are gathered wild both in England and Scotland, and

made into tarts. Lightfoot says "twenty or thirty pounds worth are sold each market day, for five or six weeks together in the town of Langtown, on the borders of Cumberland."

Nicol says the American species is more easily cultivated than the English, but is inferior to it in flavour. There is reason to believe that the quality of the fruit of each of these species is subject to variations, which have not yet been practically distinguished. Their cultivation is now so well understood, that they may both be considered with propriety as inmates of the fruit garden.

It is customary in England to prepare beds on the edges of ponds, which are banked up so as to admit of the wet getting underneath them; bog or peat earth is considered essential for the roots to run in; but it has been discovered that they can be cultivated in damp situations of a garden, with a top dressing of peat or bog earth, and if they are once suited as to soil, the plants, will multiply so as to cover the bed in the course of a year or two, by means of their long runners, which take root at different points. From a very small space a very large quantity of Cranberries may be gathered; and they prove a remarkably regular crop, scarcely affected by the state of the weather, and not subject to the attacks of insects. Sir Joseph Banks gives an account in (*Hort. Trans.* I. 71,) of his success in cultivating this fruit. "In one year viz. 1813, from 326 square feet, or a bed about eighteen feet square, three and a half Winchester bushels of berries were produced, which, at five bottles to the gallon, gives one hundred and forty bottles, each sufficient for one cranberry pie, from two and a half square feet."

CURRANT. GROSEILLER A GRAPPES. *Ribes*.

This is a genus of well known shrubs much cultivated for their fruit. It is a native of the northern parts of Europe, and found in hedges and woods in England; and there are some species indigenous in America. The fruit, being of an agreeable subacid taste, is generally relished both as a dessert and in pies and tarts; it is also much used in making wine, and is grown to a considerable extent for that purpose in Essex, Kent, and about Pershore in Worcestershire England. There are ten species cultivated in the garden of the Horticultural Society of London, at Chiswick; comprising twelve varieties of red, ten of white, five kinds of black, together with champagne, mountain, rock, upright, Pennsylvanian, &c. Any number of varieties of the red and white may be procured from sowing the seeds, but they are generally propagated by cuttings of the last year's wood, which should be of sufficient length to form handsome plants, with a clear stem, ten inches high. They will grow in almost any soil, but prosper best in one loamy and rich. The best flavoured fruit is produced from plants in an open free situation, but they will grow under the shade of walls or trees, and either as low bushes or trained as espaliers. They bear chiefly on spurs, and on young wood of from one to three years growth, and therefore in pruning most of the young wood, should be cut to within two or three buds of that where it originated. After the plants are furnished with full heads, they produce many superfluous and irregular shoots every summer, crowding the general bearers, so as to require regulating, and curtailng, both in the young growth of the year, and old wood. The principal part of the work may be done in winter, or early in the spring; but a preparatory part should be performed in summer; to eradicate suckers, and thin the superfluous shoots of the year, where so crowded as to exclude the sun and air from the fruit. In training espaliers and for standards, two branches are laid in a horizontal direction along the bottom of the trellis, per-

haps half a foot from the surface of the earth, and the growth from these of all upright shoots, which will admit of being arranged at the distance of five or six inches of each other, is encouraged. Fan standards are sometimes trained with the branches radiating from the crown of the stem.

The black Currant or *Ribes nigrum*, is common in moist woods in Russia and Siberia ; its culture is similar to that of the red, but as it is less apt to bear on spurs, than on young wood, the shoots should not be so much shortened in this as in the other.

Currant bushes will require to be planted at different distances according to situation and mode of training &c. When planted in beds, borders, or squares they should be six feet apart, but if trained as espaliers, they will require to be eight feet apart.

Many people dislike the flavour of black Currants, they are therefore not much used in the kitchen or dessert, and seldom in wine making. They make a jelly or jam in estimation as a gargle, for inflammatory sore throats. "In Russia and Siberia, wine is made of the berries alone, or fermented with honey, and with or without spirits. In Siberia they make a drink of the leaves ; these tincture common spirits so as to resemble brandy, and a few of them dried and mixed with black tea, answer all the purposes of the green material."—(Loudon.)

All kinds of Currants may be forced by placing them in any forcing department in January or February ; they will produce ripe fruit in April and May.

ELDER. SUREAU. *Sambucus*.

There are several species and varieties of the Elder, in various parts of Asia, Europe and America. It is common in damp woods and hedges, and is sometimes cultivated on the bounderies of gardens. There are

black, yellow and green berried, cultivated in the London society's garden. The fruit is in great demand in various parts of England for making elder wine, of the expressed juice ; a powerful, warming, and enlivening article in cold weather.

Sambucus nigra with its variations, and *Sambucus racemosa*, or red berried, are very showy in shrubberies when in flower and fruit. The kinds cultivated for their fruit are chiefly the white and the black. The scarlet and green berried may also be used like the black, and are very ornamental for the shrubbery.

As the plant will grow any where, either in open or shady situations, it may be planted in any out ground or waste spot, in single standards, or in rows to assist in forming boundary fences. If planted as a hedge, and suffered to grow up untrimmed it will produce an abundance of berries for use. They are all easily propagated by seed sown as soon as ripe, and also by cuttings of the young shoots in the spring.

The leaves of the dwarf Elder are said to drive away mice, and the berries dye blue. "The tree" professor Martyn observes "is a whole magazine of physic to rustic practitioners, nor is it quite neglected by more regular ones. An excellent healing ointment is made of the green inner bark, which is also purgative in moderate, and diuretic in small does. A decoction of the flowers promotes expectoration, and they give a peculiar flavour to vinegar. The French put layers of the berries, in heaps or casks of apples, to which they communicate a most agreeable odour."

FIG. FIGUIER. *Ficus carica*.

There are many species of the Fig, which are all natives of warm climates. In some parts of Asia, and in the South of Europe, they are always grown as standards ; and the fruit, green and dried, forms an im-

portant part of the food of the inhabitants. The London Horticultural catalogue contains the names of seventy five sorts ; and Messrs. Prince, of Flushing, have upwards of forty in their collection, some of which are select sorts from France and Italy. It is cultivated in England as a fruit tree, and, in warm situations, will ripen its fruit in the open air. In Sussex, on the sea coast, it ripens its fruit on standards. Some of the best in England, are at Arundel Castle ; and there is a Fig orchard of one hundred trees at Tarring, near Worthing. Those at Arundel, are planted six or eight feet apart, and from a single stem allowed to continue branching conical heads, pruning chiefly irregular and redundant growths, and cutting out decayed or injured wood.

The Fig tree may be propagated from seed, cuttings, layers, suckers, roots, and by grafting ; the most generally approved method is by layers or cuttings, which come into bearing the second, and sometimes the first year. No tree is more robust or more prolific, even plants in pots or tubs, kept in a temperature adapted for the Orange tree, will fruit freely and ripen two crops a year, and by being taken good care of through the winter, will go on growing and ripening fruit without intermission.

When the Fig is planted in a garden, a good loamy soil should be provided ; and it may be trained to close fences or trellises in sheltered situations. At the approach of winter they must be protected ; those trained to close fences may be secured through the winter, by a covering of matting ; and such as may be in open situations should be liberated from the trellis and laid down close to the ground, and covered three or four inches with earth ; or trenches may be formed of that depth, sufficient to contain the branches, which should be fastened down with hooked pegs, without cramping them ; such of the strong central branches as will not bend, may be enveloped in litter. They should be pruned before they are laid down in November, and on

being raised again in April, they may be trained as before. Figs may be cultivated in private gardens as easily as the vine.

FILBERT AND HAZLENUT. NOISETIER AVELINIER. *Corylus*.

The Filbert, in many varieties, and also the common Hazlenut, grows spontaneously in the woods of Britain, and some few varieties are indigenous in this country. The kinds of Filberts generally cultivated, are the white, red, cob, clustered, and frizzled; of each of which, there are many varieties. As this shrub is so easily cultivated, it is a matter of astonishment that the nuts from this genus of plants, are so scarce in our markets. In different parts of England there are Filbert orchards. In the Filbert grounds about Maidstone, in Kent, it is a prevailing practice to cultivate Hops, standard Apples, and Cherries, among the Filberts; when these come into a bearing state, the Hops are destroyed or transplanted elsewhere, and the fruit trees only suffered to remain. The spare ground, is then planted with Gooseberries, Currants, &c. The red Filbert is allowed to have a finer flavour than the white. The cob-nut is large, with a thick shell, but the kernel is sweet, and of considerable size. The Barcelona is a good large nut with a thin shell. The crossford is very sweet, kernels well, and the tree is a great bearer.

All the different kinds may be grown as dwarf standards; or they will bear very well if planted in clumps; but as they produce an abundance of suckers, these should be parted off frequently, and planted in a nursery bed for stock; as the bearing plants will cease to produce fruit in any quantity, if the suckers are allowed to form a thick bush. They may be propagated by seed, by

suckers, by layers, or by grafting in the spring upon seedling or sucker stocks.

The Filbert bears principally upon the sides of the upper young branches, and from small shoots which proceed from the bases of side branches cut off the preceding year. The leading shoot is every year to be shortened, and every shoot that is left to produce fruit should be clipped; which prevents the tree from being exhausted in making wood at the end of the branch.—Such branches as may have borne fruit, must be cut out every year, in order to promote the growth of a supply of young fruit-bearing branches.

GOOSEBERRY. GROSEILLER. *Ribes grossularia*
& *uva crispa*.

The Gooseberry is a native of several parts of Europe, and is indigenous in America, as far north as 68. It is cultivated in greater perfection in England than in any other part of the world. In Spain and Italy, this fruit is scarcely known. In France it is neglected. In Lancashire, England, and some parts of the adjoining counties, almost every cottager cultivates the Gooseberry, with a view to prizes given at what are called Gooseberry Prize Meetings; of these there is annually published an account, with the names and weight of the successful sorts, in what is called the Manchester Gooseberry Book. The prizes vary from ten shillings to five and ten pounds sterling. There are meetings held in the spring to “make up,” as the term is, the sorts, the persons, and the conditions of exhibition; and in August to weigh and taste the fruit, and determine the prizes.

The list of the Lancashire growers contains upwards of three hundred names, from which the following are selected, as in most repute for flavor; some of these have been known to weigh over thirty pennyweights:

Reds.—Roaring Lion—Lancashire Lad—British Crown—Prince Regent—Pastime—Jubilee—Sir John Overall—Bang up—Huntsman—Smolensko—Top Sawyer—Elisha—Fox Hunter—Alwick's King—Bog-gard—Abraham Newland—Sir Francis Burdett—Beauty of England.

Yellows.—Radical—Cottage Girl—Viper—Queen--Sovereign—Husbandman—Bunkershill—Rockwood—Charm—Gunner—Bright Venus—Cheshire Cheese.

Green.—Jolly Angler—Elijah—Ocean—Independent--Favorite--Profit—Troubler—Greenwood—Laurel—Mountain—Green Gage—Farmer's Glory—Heart of Oak.

White.—Smiling Beauty--Cheshire Lass—Conquering Hero—First Rate—White Lion—Queen Ann—Queen Caroline—Bonny Lass—Sheba Queen—Merry Lass—Queen Mary--Governess—Wellington—Whitesmith—Nature—Maid of the Mill.

The Gooseberry may be propagated by all the modes applicable to trees or shrubs, but that by cuttings is usually adopted for continuing varieties, and that by seeds for procuring them. The cuttings should be taken from promising shoots just before the leaves begin to fall in the autumn; the greatest part of the buds should be taken off, leaving only two or three buds on the top.—Cut them at such a length as the strength and ripeness of the wood will bear; and plant them in good pulverized soil. On the approach of winter, lay some moss or litter around them; and by being well cultivated they will be fit to transplant when they are a year old. When bushes are procured from the public nurseries let the general supply be in such kinds as will ripen in succession. They may be planted in the kitchen garden, in single rows along the sides of the walks or paths, or in compartments by themselves, in rows from six to eight feet apart from row to row, and five or six feet apart in the rows; or in small gardens, they may be trained to a single tall stem, and tied to a stake: this,

though six or eight feet high, occasions scarcely any shade, and it does not occupy much room, nor exclude air; while at the same time the stem becomes close hung with berries, and makes a pleasant appearance in that state. Persons of taste may train them on arched trellises, which, if judiciously managed, the ground around them may be more easily cultivated; the fruit may be kept from being splashed with rain, and may be easily gathered when wanted, or preserved by shading with mats, &c. Those who may have a choice of soil, and site, should fix on a good, rich, loamy earth; and plant some of the choice kinds in a northern and eastern aspect, near the fence, to come in late in succession.

The Gooseberry produces its fruit not only on the shoots of the preceding year, and on shoots two or three years old, but also on spurs or snags arising from the older branches along the sides; but the former afford the largest fruit. The shoots retained for bearers should therefore be left at full length, or nearly so; the first pruning should be done before the buds swell, so as not to endanger their being rubbed off in the operation. Cut out all superfluous cross shoots, and prune long ramblers and low stragglers to some well placed lateral or eye; retain a sufficiency of the young well situated laterals and terminals, to form successional bearers. In cutting out superfluous and decayed wood, be careful to retain a leading shoot at the end of a principal branch. The superfluous young laterals on the good main branches, instead of being taken off clean, may be cut into little stubs of one or two eyes, which will send out fruit buds and spurs. Some persons not pruning the Gooseberry bush on right principles, cause it to shoot crowdedly, full of young wood in summer, from which the fruit is always small, and does not ripen freely with full flavour; on which account it is an important point in pruning, to keep the middle of the head open and clear, and to let the occasional shortening of the shoots be sparing and moderate. Between the bearing branches keep a

regulated distance of at least six inches at the extremities, which will render them fertile bearers of good fruit.

The prize cultivators of this fruit in Lancashire, are particular in preparing a very rich soil, and they water occasionally with liquor which drains from dung-hills ; and there are some, who, not content with watering at the root and over the top, place a small saucer of water under each Gooseberry, only six or eight of which are left on a bush ; this is technically called suckling.—There are others that ring some of the branches ; this is done by cutting out small circles of bark round them ; and by pinching off a great part of the young wood, the strength may be thrown to the fruit. Unripe Gooseberries may be preserved in bottles against winter : some, after filling the bottles in a dry state, stand them in a slow oven, or in hot water, so as to heat them gradually through without cracking them ; the berries will keep green a whole year, by being close corked and sealed, as soon as cold.

The Gooseberry may be forced in pots or boxes placed in pits, or in the peach house or vinery. “ Hay plants in pots in November, removes to the peach house in January, and has ripe fruit in the end of April, which he sends to table growing on the plants.”—(Hort. Trans. 4, 415.)

GRAPE. VIGNE. *Vitis, vinefera & vulpina.*

The Grape Vine is described by Loudon as a trailing deciduous hardy shrub, with a twisted irregular stem, and long flexible branches, decumbent, like those of the bramble, or supporting themselves when near other trees, by means of tendrils, like the pea. The leaves are large, lobed, entire, or serrated and downy, or smooth, green in summer, but when mature, those of varieties in which the predominating colour is red,

constantly change to, or are tinged with some shade of that colour; and those of white, green, or yellow grapes; as constantly change to a yellow, and are never in the least tinged either with purple, red, or scarlet. The breadth of the leaves varies from five to seven or ten inches, and the length of the foot stalks from four to eight inches. The flowers are produced on the shoots of the same year, which shoots generally proceed from those of the year preceding: they are in the form of a raceme, of a greenish white colour, and fragrant odour, appearing in the open air in June; and the fruit which is of the berry kind, attain such maturity as the season and situation admit, by the middle or end of September. The berry or grape is generally globular, but often ovate, oval, oblong, or finger shaped; the colours green, red, yellow, amber, and black, or a variegation of two or more of these colours. The skin is smooth, the pulp and juice of a dulcet, poignant, elevated generous flavour. Every berry ought to enclose five small heart or pear shaped stones; though, as some generally fail, they have seldom more than three, and some varieties, as they attain a certain age, as the Ascalon or sultana raisin, none. The weight of a berry depends not only on its size but on the thickness of its skin, and texture of the flesh, the lightest being the thin skinned and juicy sorts, as the sweet water or muscadine; and what are considered as large berried of these varieties, will weigh from five to seven penny-weights, and measure from one to two-thirds of an inch in girth. A good sized bunch of the same sorts may weigh from two to six pounds; but bunches have been grown of the Syrian grape, in Syria, weighing forty pounds, and in England weighing from ten to nineteen pounds. A single Vine in a large pot, or grown as a dwarf standard in the manner practiced in the vineyards in the north of France, ordinarily produces from three to nine bunches: but by superior management in gardens in England, the number of bunches is prodigiously increased, and one plant, that of the red **Hamburgh** sort, in the vinery

of the royal gardens at Hampton Court, has produced two thousand two hundred bunches, averaging one pound each, or in all nearly a ton. That at Valentines in Essex, has produced two thousand bunches of nearly the same average weight.

The age to which the Vine will attain in warm climates is so great as not to be known. It is supposed to be equal or even to surpass that of the Oak. Pliny speaks of a Vine which had existed six hundred years; and Bose says, there are Vines in Burgundy upwards of four hundred years of age.

In Italy there are vineyards which have been in a flourishing state for upwards of three centuries, and Miller tells us, that a vineyard a hundred years old is reckoned young. The extent of the branches of the Vine, in certain situations and circumstances, is commensurate with its produce and age. In the hedges of Italy, and woods of America, they are found overtopping the highest Elm and Poplar trees; and in England one plant trained against a row of houses in Northallerton (lately dead) covered a space in 1585, of one hundred and thirty-seven square yards; it was then above one hundred years old. That at Hampton Court, nearly of the same age, occupies above one hundred and sixteen square yards; and that at Valentine, in Essex, above one hundred and forty-seven square yards. The size to which the trunk or stem sometimes attains in foreign countries, is so great as to have afforded planks fifteen inches broad, furniture, and statues; and the Northallerton Vine, above mentioned, in 1785, measured four feet in circumference near the ground, and one branch of the Hampton Court Vine measures one hundred and fourteen feet in length. Vine timber is of great durability.

The varieties of the Grape in countries where it is grown for the wine press, are as numerous as the vineyards; for as these for the most part differ in soil, aspect, elevation or otherwise, and as the Vine is greatly the child of local circumstances, its habits soon become

adapted to those in which it is placed. When it is considered that a vineyard once planted will last two or three centuries, it will readily be conceived that the nature of a variety may be totally changed during only a part of that time. The varieties mostly in esteem for wine making, are small berries, and bunches with an austere taste. The Burgundy, as modified by different soils and situations, may be considered the most general vineyard Grape of France, from Champagne or Marne, to Marseilles or Bordeaux.

The best wine in Italy and Spain, is also made from Grapes of this description; but in both countries many of the larger berried sorts are grown on account of their producing more liquor. The sweet wines as the Malmsey, Maderia, Constantia, Tokay, &c. are made from sweet berried Grapes allowed to remain on the plants till over ripe. That wine is the strongest, and has most flavour, in which both the skins and stones are bruised and fermented. The same thing is the case in making cider; but in both processes bruising the stones or kernels is often neglected. The Vine was formerly extensively cultivated in Britain for the wine press, but its culture is now confined to the garden as a dessert fruit; and they have in that country not only the best varieties, but they grow the fruit to a larger size and of a higher flavour than is done any where else in the world; this is owing to the perfection of their artificial climates, and the great attention paid to soil and sub-soil, and other points of culture. The fruit is produced in some vineys during every month of the year; and in the London markets (generally) it is to be had in the highest degree of perfection from March to January.

The Vine will thrive in any soil that has a dry bottom; and in such as are rich and deep it will grow luxuriantly and produce abundance of large fruit; in shallow, dry, chalky or gravelly soils, it will produce less fruit, but of better flavour. Speechly recommends dung reduced to a black mould, the dust and dirt of

roads, the offal of animals or butchers' manure, horn shavings, old rags, shavings of leather, bone dust, dung of deer and sheep, human excrement, when duly meliorated by time, a winter's frost, and repeatedly turning over. Abercrombie says that dung out of a cow house perfectly rotted, is a fine manure for the Vine ; he recommends drainings from dung-hills to be used over the ground once in ten or fourteen days from the time the buds rise, till the fruit is set, and that fresh horse dung be spread over the ground in autumn as a manure, and also to protect the roots from the inclemency of the weather ; some however disapprove of manuring high, as being calculated to produce wood rather than fruit.

The general mode of propagating the Vine is by cuttings, either a foot or more long, with a portion of two year old wood, or short, with only one bud, or one bud and a half a joint, &c., Vines are to be had at the Nurseries propagated either from layers, cuttings or eyes ; but plants raised from cuttings are generally preferred ; many are of opinion that it is a matter of indifference from which class the choice is made provided the plants are well rooted, and in good health, and the wood ripe. A mode of very general utility, is to select the plants in the nursery a year before wanted, and to order them to be potted in very large pots. Varieties without end are raised from seed, and it is thought that by propagating from the seeds of successive generations some sorts may ultimately be procured better adapted for ripening their fruit in the open air than now known. A seedling Vine carefully treated will show blossoms in its fourth or fifth year ; say that it produces a fair specimen of its fruit in the sixth year, then a new generation may be obtained so often ; but seeds ought never to be sown except for experiment.

William Robert Prince Esq. in his treatise on the Vine, published 1830, enumerates about five hundred and fifty varieties in cultivation in the vineyard attached to the Linnæan Botanic Garden at Flushing, including about ninety American native grapes ; but no suf-

ficient evidence has as yet been exhibited, of vineyards flourishing here equal to what they do in Europe. Mr. Loubat has succeeded with some of the foreign varieties at his vineyard on Long Island; and considerable success, of late years, has attended the cultivation of some of the varieties of table fruit in private gardens. The following have been found to succeed best in the vicinity of New-York: the Sweetwater, the Chasselas, the Muscadine, the White Tokay, the Black Hamburgh, the Blue Cortiga, the Miller Burgundy, the Austrian Muscadel, the Messlier, the Morilon, the Black Prince, Blanc, and some excellent seedling sorts from the imported Lisbon Grapes. To plant a vinery for a full crop of good Grapes of various flavours, take a white and red Muscat, a white and red or black Muscadine, a white and red Frontignac, a black or red Muscadel, a white Raisin grape, a white and red Hamburgh, a Sitwell's and red Sweetwaters, a white and red Nice, a black Damascus, a red Syracuse and a black Constantia. The above list contains some of the most esteemed table Grapes of all colours and flavours, which will ripen in succession. The most preferable kinds of our native Grapes for private gardens are the 'Catawba,' the York, (Pa.) 'Black Madeira,' the Schuylkill Muscadel and the Isabella. To these may be added the Scuppernong or Hickman grape, which is said to be larger than the Fox Grape of a delightful perfume, and when ripe, it is of a yellowish white colour."

Previous to planting Vines, care should be taken, that the ground be well pulverized and prepared for some distance around, for the roots to spread. The soil should be deep and dry and some rich compost or vegetable mould should be used around the roots in filling in; a handfull or two of wet ashes to each plant is recommended by Mr. Loubat as beneficial; and he recommends the planting to be done in the month of March, or early in April.

There are various methods adopted in training and pruning the Vine; and it appears impossible to lay

down rules to suit every cultivator. The Vine having, like other trees, a tendency to produce its most vigorous shoots at the extremities of the branches, and particularly so at those which are situated highest, it generally happens, when it is trained high, that the greater portion of the fruit is borne near the top; and it has been observed, that the fruit produced on the vigorous shoots, which naturally grow at the extremities of the long branches, is generally more abundant, and of finer quality, than that produced on the short lateral ones, from which circumstance, high training seems to be the best calculated for private gardens.

In some parts of Italy, Vines are cultivated together with Mulberry trees, and are allowed to mingle and hang in festoons; thus silk and wine are produced on the same spot; and it is considered that when Vines are allowed to grow over trees; on the sides of a house, or on bowers, or extended on tall poles, without much trimming, they will produce more fruit, and are not so liable to mildew. Dr. G. W. Chapman, of New-York, having paid some attention to the cultivation of native Grapes, observes, that the Vine, in its natural state, seldom or ever throws out bearing shoots until it reaches the top of the tree on which it ascends, when the branches take a horizontal or descending position. From this fact, he considers horizontal training preferable to that in the fan shape. From the experiments he has made; he has found that the shoots coming from those parts of the branches bent downwards, are more productive than from those ascending; he considers deep digging around the vine, even to the destruction of some of the extending roots, as calculated to promote the growth of more fruit and less wood, than if allowed to spread near the surface; and he disapproves stopping the shoots before the fruit until July.

Mr. William Wilson, of Clermont, leaves his Vines their whole length at the time of trimming in October. In November they are laid on the ground at full length, fastened down with pins, and covered lightly with earth; in this state they lie all the winter. In April, as soon

as the weather will permit, they are uncovered, and left lying on the ground ten or twelve days ; by the first of May, the Vines are trained to stakes or poles of the length of ten feet and upwards ; and by the middle of June, the stakes are entirely covered by new shoots of the Vine, and with plenty of fruit, which ripens in September. Mr. W. says, that until he pursued his present course, his fruit was frequently blasted and mildewed, but that he has now Vines twenty or thirty feet long, which run up the fruit trees adjoining ; others, being carried up eight or ten feet, are stretched horizontally. It is seldom he gathers fruit within three or four feet of the ground, and he has never any blasted or infected with mildew ; he keeps the ground cultivated by frequent hoeing and raking ; but he says he has used no manure for ten years or more.

Edward H. Bonsall, Esq. has a vineyard of American Grapes at Germantown, Pa., in a high state of cultivation. In page 331 of Prince's Treatise on the Vine, is a letter to the author, containing some valuable information, from which the following is extracted as appropriate to our subject :

Mr. Bonsall's vineyard is situated between the Schuylkill and Delaware rivers, four miles from the former, and eight from the latter, at an elevation of three hundred feet above their level, having an aspect facing S. S. E., with a substratum of light isinglass soil, and seems well suited to the purpose. He says, " from my experience, both on my premises and at other places, it is my opinion that we should reject almost all the foreign varieties, especially where our object in cultivating them is to make wine." He has upwards of thirty varieties of American Vines under cultivation ; he recommends preparing the ground by ploughing with two ploughs with strong teams, one immediately behind the other, *in the same furrow*, each of them *set deep* ; and after the ploughing is completed, to be harrowed thoroughly. Then in the direction the rows are intended to be planted, parallel furrows are run across the field, at the distance of eight feet from each other ; these are after-

wards crossed at right angles, five feet asunder. In the opening, at the intersection of these furrows, cuttings from nine to twelve inches long are planted. In this manner, nearly two thousand Vines are extended over an acre of ground, arranged with a view to the Vines being, when grown, at distances of four by seven feet from each other; to this end, he frequently plants two cuttings in a place, some of which are used to fill up with, in case of failures. He says, that in 1829 he planted in nursery beds from two to three thousand cuttings as late as the middle of April to the middle of May, with better success than at any previous time. "In this case, the slips should be kept in a cool damp place, a cellar, or ice-house, where vegetation may be held in check. To insure their freshness, sprinkle them occasionally with water. Previous to planting, cut them a proper length, and place them, with their lower ends three or four inches in water, in a tub above ground, where they may soak three or four days. At this season the temperature will be likely to be such as will spur vegetation at once into healthy and vigorous action. The fall, or early in the spring, is preferable for rooted plants. In the autumn of the first year, after the frost has killed the unripe part of the young shoots, they should be pruned down to the mature firm wood, and then with a hoe hilled over with the surrounding soil, which will completely protect them through the winter. If left without protection the first winter, many of them will perish."

Mr. Bonsall says his mode of training, as far as he is aware of it, is entirely peculiar to himself, which he describes as follows: "I take chestnut posts, the thickness of large fence rails, seven feet in length; these I plant along the rows, at distances of ten feet from each other, and at such a depth as to leave five feet above the surface of the earth; then taking three nails to each post, and driving them to within half an inch of their heads, the first two and a half feet from the ground, a second mid-way between that and the top, and the third near the top I attach No. 11 iron wire (one degree

soft is best) firmly to one of the nails in the end post, pass on to the next, and stretching it straight and tight, give it one turn round a nail in the same line as the one to which it was first attached. Having in this manner extended it along the three courses, the whole length of the row, my trellis is formed. I have had a portion of my vineyard fitted up in this way for three years, and experience has confirmed the superior fitness of the plan. It is not its least recommendation, that it possesses in a degree the character of labour saving machinery. A very important and extensive *labour-making* portion of the operations in the vineyard during the summer, is the attention required by the growing shoots to keep them properly trained up. They grow and extend themselves so rapidly, that where the strips of the trellis are lath, or where poles are used to support Vines, unless very closely watched, they fall down in every direction, in a very unsightly and injurious manner. Here the wire being small, the tendrils or clasps eagerly and firmly attach themselves to it, and thus *work for themselves*, in probably two-thirds of the instances where the attention of the vignerons would otherwise be required. There is free access afforded to the sun and air, and no hold for the wind to strain the frame," &c. Mr. Bonsall says further, "I shall not enter into a minute description of my manner of pruning, but may just say, that after the vines have attained a full capacity for production, (say five years from the cutting,) my view is to prepare them for bearing an average of fifty clusters to each, leaving several shoots of from three to five joints on a vine for this purpose. When fresh pruned, they will not be more than four feet high, at their greatest age."

Although the man of taste and capacity for improving on the improvements of others may have gleaned ideas from the above extracts sufficient to enable him to cultivate the vine in his own garden, it may be necessary to direct the reader's attention to the different methods of cultivating this excellent fruit in varied situations.

A Vine may be trained horizontally under the coping of a close fence or wall, to a great distance, and the borders in an east, south-east, and southern aspect of large gardens may be furnished with a variety of sorts which will ripen in great perfection, without encumbering the borders; or the plants may be trained low, like currant bushes, in which case, three or more shoots, eighteen inches or two feet in length, may diverge from the stem near the ground, to supply young wood annually for bearing. The summer pruning consists in removing shoots which have no fruit, or are not required for the succeeding season; in topping fruit-bearing shoots, and also those for succeeding years, when inconveniently long and straggling. For as by this mode the shoots destined to bear are all cut into three or four eyes at the winter pruning, no inconvenience arises from their throwing out laterals near the extremities, which stopping will generally cause them to do. In training Vines as standards, the single stem at bottom is not allowed to exceed six or eight inches in height, and from this two or three shoots are trained, or tied to a single stake of three or four feet in length. These shoots bear each two or three bunches, within a foot or eighteen inches of the ground, and they are annually succeeded by others which spring from their base, that is, from the crown or top of the dwarf main stem. This is the mode practiced in the north of France and in Germany; in the south of France and in Italy, the base or main stem is often higher, and furnished with side shoots, in order to afford a great supply of bearing wood, which is tied to one or more poles of greater height. The summer pruning in this case, is nearly the same as in the last. In the winter pruning, the wood that has borne is cut out, and the new wood shortened, in cold situations, to three or four eyes, and in warmer places to six or eight eyes.

Of the various methods of pruning and training the Vine suited to private gardens and vineries, the following are selected from Loudon's *Encyclopædia of Gardening*:

Speechly's mode of pruning and training the Vine against a wall or trellis, is to cut it down to two eyes or buds; the next winter, the shoots of the preceding summer are shortened each to one eye; two leading shoots are produced, trained upright during summer, and in the following winter headed down to from three to five feet each, and led in horizontally, parallel to the ground, and about a foot above it; these main stems produce shoots from every eye, but only a few are selected, which stand from a foot to fifteen inches apart, and these are trained upwards during summer, and in winter every other one is cut out to within two or three eyes of the main stem, and the rest shortened to one third of the length of the trellis. The following summer, the third, a moderate crop will be produced from the side shoots of the preceding year's wood, and from the spurs of the main stem. In the winter following, the shoots which have produced fruit are shortened down to two eyes, except the leaders to the long shoots, which are left with four or five eyes. Next summer, the fourth, the top of the wall or trellis will be reached by the leading shoots, and the spurs are now allowed to produce each one leader. In winter both of these leaders are headed down to four or five eyes, and the side shoots from the old wood to one or two eyes. In the following summer, the fifth, a full crop of Grapes is produced in every part. This constitutes one course or rotation, and the next, and all the future courses, extend only to four years, in which the object is to renew the upright bearers every fourth year, the intervening spurs furnishing shoots to succeed them. This method is called perpendicular, spur, or Dutch training; but few who adopt it pursue it so regularly as to renew the old upright shoots every fourth year, by which, and for other causes, and chiefly the small quantity of fruit produced during the first four years, it has fallen into disrepute.

Abercrombie's methods of pruning established Vines, admit of much diversity, as the plants are in different situations. Without reckoning the cutting down of young or weak plants alternately to the lowermost sum-

mer shoots, which is but a temporary course, three different systems of pruning have their advocates. In the first method, one perpendicular leader is trained from the stem, at the side of which, to the right and left, the ramifications spring. When the plant is established, the immediate bearers or shoots of the growing season, and the mother bearers, or shoots of the last year's growth, are thus managed. Soon after the growing season has commenced, such rising shoots as either are in fruit and fit to be retained, or are eligibly placed for mother bearers next season, are laid in, either horizontally, or with a slight diagonal rise, at something less than a foot distance, measuring from one bearing shoot to the next: the rising shoots, intended to form young wood, should be taken as near the origin of the branch as a good one offers, to allow of cutting away, beyond the adopted lateral, a greater quantity of the branch, as it becomes old wood; the new spring laterals, not wanted for one of these two objects, are pinched off. The treatment of those retained during the rest of the summer, thus differs: As the shoots in bearing extend in growth, they are kept stopped about two eyes beyond the fruit; the connate shoots, cultivated merely to enlarge the provision of wood, are divested of embryo branches, if they show any, and trained at full length as they advance during the summer, until they reach the allotted bounds; were they stopped in the middle of their growth, it would cause them to throw out troublesome laterals; in the winter pruning, there will thus be a great choice of mother bearers. That nearest the origin of the former mother bearer, or most commodiously placed, is retained, and the other or others on the same branch are cut away; the rest of the branch is also taken off, so that the old wood may terminate with the adopted lateral; the adopted shoot is then shortened to two, three, four, or a greater number of eyes, according to its place on the Vine, its own strength, or the strength of the Vine. The lower shoots are pruned in the shortest, in order to keep the means of always supplying young wood at the bottom of the Vine.

The second method is to head down the natural leader, so as to cause it to throw out two, three, or more principal shoots; these are trained as leading branches; and in the winter pruning, are not reduced, unless to shape them to the limits of the trellis, or unless the plant appears too weak to sustain them at length. Laterals from these are cultivated about twelve inches apart, as mother bearers; those in fruit are stopped in summer, and after the fall of the leaf, are cut into one or two eyes. From the appearance of the mother bearers, thus shortened, this has been called spur pruning.

The third method seems to flow from taking the second plan as a foundation, in having more than one aspiring leader, and from joining the superstructure of the first system immediately to this, in reserving well placed shoots to come in as bearing wood. Thus, supposing a stem which has been headed, to send up four vigorous competing leaders, two are suffered to bear fruit, and two are divested of such buds as break into clusters, and trained to the length of ten, twelve, or fifteen feet, or more, for mother bearers next season. In the winter pruning, the leaders which have borne a crop, are cut down to within two eyes of the stool, or less, according to the strength of the plant, while the reserved shoots lose no more of their tops than is necessary to adjust them to the trellis.

Nicol's mode. The first year after planting, after the buds have sprung an inch or two, it will be proper to single out those to be trained, and displace the others with the thumb. Three shoots only should be trained on each plant, that is, the two lowermost, and the uppermost, if it be vigorous; but otherwise, displace it, and train the next below it. As the shoots advance, they should be trained at the distance of ten or twelve inches from each other, allowing them sufficient room in the ties to swell without being cramped. Pinch off all laterals as they appear, except one or two nearest to the point of the shoot, lest by any accident it be broken, and in that case, that a substitute may readily be found—which, however, is never equal to the main shoot

—so that great care should be taken in the training of principal leaders. One side shoot of each plant may be stopped when it is five or six feet in length, and the other when nine or ten, (as they are to be cut well down in the winter pruning,) which will throw in the more strength to the middle shoots, that are only to be headed down to about six or eight feet, and which, if well ripened, may yield a fruit next season. These should be encouraged, therefore, and be carefully trained, as long as they will grow. “In the end of the season, say in the month of November, these shoots,” Nicol observes, “are to be pruned thus: the side shoot stopped first to three eyes, the other to five or six feet, and the middle shoot to seven, eight, or ten feet, according to its strength, from which may be expected a good deal of fruit next season, and a shoot from its extremity, to be stopped at the top of the trellis this time twelvemonth. From the side shoot, pruned to five or six feet, may be expected a little fruit; and from its extremity, a shoot to be headed at this time next year, at nine or ten feet in length, which will, the season following thereafter, produce a full crop. From the side shoot, shortened to three eyes, are to be expected two shoots, the one to be trained to the height of about nine or ten feet, (to be pruned to five or six at this time next year,) and the other to four or five only, as it is again to be pruned back to two or three buds this time twelvemonth; thus providing for wood to fill the under part of the trellis.

There should be three ranges of bearing shoots, viz. one range at bottom of the trellis, from side to side, reaching from within two feet of the ground, five or six more feet upwards; a second, reaching from a foot, or perhaps two feet under the top of these, that is, from within seven or eight of the ground, to the distance of fourteen or fifteen feet upwards from it; and a third range reaching from a foot or two under the tops of these last to the uppermost row of wires on the trellis: the shoots of the first, or lower range, being headed at about five or six feet; those of the second, or middle range, at about seven or eight; and those of the third,

or uppermost, at about nine or ten feet in length, all a foot or two, more or less, according to circumstances ; according to their strength, how low or how high upon the plants they have issued, and how far they have sprung, and are fully matured. The distance at which these shoots should be placed from each other in their respective ranges, is about thirty inches ; which distance is necessary to give room to the stubs of next year, on which the clusters are to hang, as in this season ; and which distance may be varied a few inches, according to the kinds of Grapes, some growing stronger than others. The undermost shoots on the trellis, or those placed nearest to the ground, and which were only trained to the height of a few feet, must be shortened back to two or three joints ; it being a principal point in the training of Vines, always to provide for a supply of bottom wood and to keep young wood as near to the ground, or lower part of the plants, as possible.

In pruning, cut generally at two inches above the bud. Some cut nearer, even as near as half an inch, which is apt to weaken the shoot of next season, and sometimes to prevent its vegetating at all, the buds being very susceptible of injury, on account of the soft and spongy nature of the wood. In the cutting out of old wood, be careful to cut in a sloping direction, and to smooth the edges of the wood, in order to prevent its being injured by moisture. The pruning being finished, let the loose, shreddy, outward rind on the old wood be carefully peeled off, observing not to injure the sound bark, and clear the trellis of branches of leaves, tendrils, &c. Let the shoots and branches be afterwards regularly laid in, at the distance above specified, particularly the young shoots that are expected to bear next season. As to the others, it is not so material how near the young shoots be placed to the old, or even though they sometimes cross them. Choose strands of fresh matting, or pack-thread, to tie with ; and observe to leave sufficient room for the swelling of the shoots and branches next season, as above cautioned."

In Griffin's mode of training and pruning in the vine-ry, only a single shoot is left under each rafter. The Vine is planted outside, close to the parapet, and introduced through a hole immediately under the rafter up which it is trained. On planting, it is cut down to one eye; about Christmas, the shoot formed during the preceding summer is cut down to two or three feet; the second year, one shoot only is trained from the extremity, and it is again headed down in winter, so that the joint length of the two years' wood is from ten to fifteen feet: and at the Christmas of the third year, the shoot is cut off at the end of the rafter. The fruit, it is obvious, is to be obtained from the side shoots, or spurs, proceeding from this main shoot. The spurs are cut down to single eyes every winter, till the main shoots get coarse and rugged, which will happen in about ten years; it is then cut away entirely, a young stem having been previously trained up the two preceding years from the bottom, to substitute in its place. As soon as the plants become sufficiently strong to furnish wood, from the point where they enter the house, for a second and third branch, then a proper number must be fixed on as permanent plants, and their side branches brought successively forward and trained to the contiguous rafters, one bearing branch being applied to each rafter. The weight of Grapes produced under each rafter, by this mode of pruning, is generally about forty pounds, two bunches to each spur, or from fifty to one hundred bunches, averaging half a pound each.

Summer Pruning.—"This depends generally on the necessity of admitting light and air to the fruit and young wood, and particularly on the sort of winter pruning to be adopted. The gardener, therefore, as Nicol observes, must have a predestinating eye to the following season." Whatever methods of pruning are used, Mr. Phial remarks, "the Grape Vine, through the whole course of the growing season, requires constant attendance, so as not to suffer the plant to be crowded in any part with superfluous shoots or leaves, and no more fruit ought to be suffered to swell on the

plant than it is well able to bring to perfection. The berries, also, on each bunch should be thinned, so that they may have room to swell, without pressing too hard on each other."

As the shoots of newly planted Vines advance, they must be kept regularly fastened to the trellises. Divest them of their wires, and also take off their laterals as they appear. The Vines in general may be permitted to run twenty feet, and the most vigorous thirty-five feet, before they are stopped, if the trellises extend so far. Sometimes a vigorous shoot having run to the extent of the frame, is conducted in some other direction, as is most convenient. Stop the shoots, by pinching off their tops. After they have been stopped, they generally send out laterals from three or four of the upper eyes. If these laterals are at once taken off, the sap will be merely diverted to the lower part of the shoot; permit them, therefore, to proceed about twelve inches, and then pinch off their tops. These shortened laterals will, in their turn, send out others, which should be stopped at the second joint.

In the second season, as soon as the shoots are half a span long, the rudiments of the bunches will be perceptible. The bunch is produced on the naked side of the shoot, opposite the leaf bud. Having ascertained the most promising shoots, divest the vines of supernumerary branches as they rise. Fruitful laterals will sometimes show two or three bunches at each eye; and this is apt to tempt the pruner to retain too many. On the leading shoot, retain of the best laterals, to the right and left, a number proportioned to the vigour and age of the plant; one on each side, as near the bottom as it offers, with a second, third, fourth, up to seven, at the distance of three feet, if the plant is in its fourth summer, but only five, at the distance of four feet, if this be the third summer since the plant was struck. Train the shoots reserved on each side, tying them to the trellis with strands of matting. Leave on each branch two bunches, or a single bunch, according as the plant is in the fourth or third season from its origin; pinch off the

others. Afterwards stop the bearing laterals at the second joint above the fruit. Rub off water shoots from the older wood. Pinch off inferior laterals and tendrils.

Nicol observes, that "most of the summer pruning of Vines may be performed with the fingers, without a knife, the shoots to be displaced being easily rubbed off, and those to be shortened, being brittle, are readily pinched asunder." After selecting the shoots to be trained for the production of a crop next season, and others necessary for filling the trellis from the bottom, which shoots should generally be laid in, at the distance of a foot or fifteen inches from each other, rub off all the others that have no clusters, and shorten those that have at one joint above the uppermost cluster. For this purpose, go over the plants every three or four days, till all the shoots in fruit have shown their clusters, at the same time rubbing off any water shoots that may rise from the wood.

Train in the shoots to be retained, as they advance. If there be an under trellis, on which to train the summer shoots, they may, when six or eight feet in length, or when the Grapes are swelling, be let down to it, that the fruit may enjoy the full air and light, as it advances towards maturity. Such of these shoots as issue from the bottom, and are to be shortened in the winter pruning to a few eyes, merely for the production of wood to fill the trellis, may be stopped when they have grown to the length of four or five feet. Others that are intended to be cut down to about two yards, and which issue at different heights, may be stopped when they have run three yards, or ten feet, less or more, according to their strength. And those intended to cut at, or near to the top of the trellis, should be trained a yard or two down the back, or a trellis may be placed so as to form an arbour; or they may be placed to run right or left a few feet on the uppermost wire.

The stubs or shoots on which the clusters are placed, will probably push again after being stopped, if the plants be vigorous. If so, stop them again and again;

but after the fruit are half grown, they will seldom spring. Observe to divest the shoots, in training, of all laterals as they appear, except the uppermost on each, in order to provide against accidents, as hinted at above, in training the new planted Vines. When these shoots are stopped, as directed above, they will push again. Allow the lateral that pushes to run a few joints, and then shorten it back to one ; and so on, as it pushes, until it stop entirely. When the proper shoots get ripened nearly to the top, the whole may be cut back to the originally shortened part, or to one joint above it, if there be reason to fear that the uppermost bud of the proper shoot will start.

Divest the plants of all damped and decayed leaves as they appear, as such will sometimes occur in continued hazy weather, and be particularly cautious not to injure the leaf that accompanies the bunch, for if that is lost, the fruit will be of little value.

“ Every one of penetration and discernment,” Nicol observes, “ will admit the utility of thinning the berries on bunches of grapes, in order that they may have room to swell fully ; and further, that of supporting the shoulders of such clusters of the large growing kinds as hang loosely, and require to be suspended to the trellis or branches, in order to prevent the bad effects of damp or mouldiness in very moist seasons. Of these, the *Hamburgh*, *Lombardy*, *Royal Muscadine*, *Raisin*, *St. Peter’s*, *Syrian*, *Tokay*, and others, should have their shoulders suspended to the trellis, or to the branches, by strands of fresh matting, when the berries are about the size of garden peas. At the same time, the clusters should be regularly thinned out with narrow pointed scissors, to the extent of from a fourth to a third part of the berries. The other close growing kinds, as the *Frontignacs*, *Muscats*, &c., should likewise be moderately thinned, observing to thin out the small seedless berries only of the *Muscadine*, *Sweet Water*, and flame-coloured *Tokay*. In this manner, handsome bunches and full swelled berries may be obtained ; but more so, if the clusters or over-burdened plants be also

moderately thinned away. Indeed, cutting off the clusters, to a certain extent, of plants over-loaded, and pushing weak wood, is the only means by which to cause them to produce shoots fit to bear fruit next year; and this should be duly attended to, so long as the future welfare of the plants is a matter of importance."

The preceding observations may be considered as falling short of what may be expected on the cultivation of so important a fruit as the Grape; but it is introduced into this work only as a garden fruit. The modes of training in vineyards and vineries, are alike suited to the garden. Low training may be practiced in borders or hedge rows, in large gardens; and high training in sheltered situations, on high trellises or arbours. By proper management, the Vine may be elevated to the middle story of a house by a single stem, and afterwards trained to a great height, according to the taste of the proprietor. For observations on the destruction of insects, the reader is referred to page 174 to 180. As the Vine is often trained near buildings, an awning may be conveniently formed over the tops, so as to admit of fumigating the Vine with smoke from tobacco, &c., as may be necessary in the summer season; or a sort of moveable tent may be made of light boards, and cheap glazed linen, or an old sail, &c., capable of covering the Vine while a smoke is created underneath; this will effectually destroy such insects as may annoy the Vine, and may prevent mildew and other diseases.

MEDLAR. NEFLIER. *Mespilus*.

The Medlar is a small sized branching tree; the branches woolley, and covered with an ash coloured bark, and, in a wild state, covered with stiff spines. Leaves oval, lanceolate, serrate; towards the point somewhat woolley, on very short channelled petioles. Flowers produced on small natural spurs, at the ends and sides of the branches; petals white. Fruit, a tur-

binated berry, crowned with five calycine leaflets; pulp, thick, mixed with callose granules, and containing five wrinkled stones. The tree is sometimes introduced into an orchard for its fruit, which is called by the French, *Neffe*, which signifies truncate (maim.) It is eaten raw, in a state of incipient decay; its taste and flavour are peculiar, and by some esteemed. The plant is a native of the south of Europe, but appears to be naturalized in some parts of England, where it is raised in copses for binds, &c. The soil on which the Medlar thrives best, is a loamy rich earth, rather moist than dry, but not on a wet bottom. There are five varieties noticed in the Linnæan Botanic Garden Catalogue. The Dutch Medlar is considered the best. Miller says, that if the stones are taken out of the fruit as soon as it is ripe, and immediately planted, they will come up the spring following, and make good plants in two years. It is rather difficult to strike by cuttings, but may be grafted on seedlings of the wild Medlar, or on other species of the same genus.

The Medlar, like the Quince, is usually grown as a standard or espalier. In pruning, cut out all dead and cankered wood, and keep the tree thin of branches, when it is desired to have large fruit. Care is requisite to train standards with tall stems. Espaliers will require a summer and winter pruning, as in the Apple tree.

MULBERRY. MURIER. *Morus*.

There are several species of the *Morus* or Mulberry. The white kind is commonly cultivated for its leaves to feed silk worms, though in some parts of Spain, and in Persia they are said to prefer the Black Mulberry. In China, it appears that both sorts are grown for the same purpose. The most esteemed variety of the white is one grown in Italy, and especially in Lombardy, with vigorous shoots, and much larger leaves than the other.

The *Morus multicaulis* is cultivated in many parts of France, and is by some preferred to all other varieties. It is said that a less quantity of foliage from this variety will satisfy the Silk worms. The late Andrew Parmentier, Esq., of Brooklin, was the means of introducing some of the best kinds into this country; and it is said that twelve different varieties are now cultivated in Madame Parmentier's Nursery at Brooklyn, N. Y., many of which have been tested and found to be the true kinds.

In France, the white Mulberry is grown as pollard Elms are in England. In Lombardy, it is grown in low marshy ground. In China, it is also grown in moist loamy soil, and both there and in the East Indies, as low bushes, and the plantations rooted up and renewed every three or four years. In many parts, when the leaves are wanted for the worms, they are stripped off the young shoots, which are left naked on the tree; in other places, the shoots are cut off, which is not so injurious to the tree, while the points of the shoots, as well as the leaves, are eaten by the worms. The plants are sometimes raised from seed, and one ounce of seed will produce 5000 trees, if sown in rich loamy soil, the latter end of April, or early in May; but the young plants will require protection the first winter; they are more commonly propagated by layers and cuttings, put down in the spring. The Italian variety is frequently grafted on seedling stocks of the common sort, in order to preserve it from degenerating. In the East Indies, the plants are raised from cuttings, three or four of which are placed together, where they are finally to remain.

But Mulberry trees are valuable for their fruit; and in England the black and red kinds are in great esteem, and much cultivated. The fruit of the white Mulberry is white, and less acid than that of the black species. The black is naturally a stronger tree than the other; the fruit is of a dark blackish red, and of an agreeable aromatic and acid flavour. The red Mulberry has black shoots, rougher leaves than the black Mulberry, and a

dark reddish fruit, longer than the common sort, and of a very pleasant taste. The fruit of the yellow Mulberry is said to be sweet and wholesome, but not much eaten, excepting by birds; the timber, however, is valuable, from its abounding in a slightly glutinous milk of a sulphureous colour, and is known in Europe under the name of fustic wood, for dying a yellow colour.

In Russia, the fruit of the *Morus tartarica* is eaten fresh, conserved, or dried; a wine and a spirit are also made from them, but the berries are said to be of an insipid taste. All the species of *Morus* are remarkable for putting out their leaves late, so that when they appear, gardeners may safely set out their green-house plants, taking it for granted that all danger from frost is over; from this circumstance, plantations of Mulberry trees may be made in this country, in the spring of the year, with greater safety.

The Mulberry produces its fruit chiefly on little shoots of the same year, which arise on last year's wood, and on spurs from the two year old wood; in both stages, mostly at the ends of the shoots and branches. In pruning, thin out irregular crossing branches, but never shorten the young wood, on which the fruit is produced. If any of the dwarfish kinds are cultivated as espaliers for their fruits, cut so as to bring in a partial succession of new wood every year, and a complete succession once in two years, taking the old barren wood out as may be necessary. As the blossom buds cannot be readily distinguished from others in the winter, the best period for pruning is when the blossoms first become visible in spring.

There is another genus of plants known as the Paper Mulberry, which is very ornamental, called *Broussonetia papyrifera*; though a low tree, it has vigorous shoots, furnished with two large leaves; the fruit, which is small, is surrounded with long purple hairs, changing to a black purple colour when ripe, and full of juice. "In China and Japan, it is cultivated for the sake of the young shoots, from the bark of which, the inhabitants of the eastern countries make paper. The bark

being separated from the wood, is steeped in water, the former making the whitest and best paper. The bark is next slowly boiled, then washed, and afterwards put upon a wooden table, and beat into a pulp. This pulp being put in water, separates like grains of meal. An infusion of rice, and the root of manhiot is next added to it. From the liquor so prepared, the sheets of paper are poured out one by one, and when pressed, the operation is finished.

“The juice of this tree is sufficiently tenacious to be used in China as a glue, in gilding either leather or paper. The finest and whitest cloth worn by the principal people at Otaheite, and in the Sandwich Islands, is made of the bark of this tree. The cloth of the Bread Fruit tree is inferior in whiteness and softness, and worn chiefly by the common people.”

NECTARINE. PECHER à FRUIT LISSE, ou BROGNONS. *Amygdalus nectarina*.

The varieties of this fruit resemble the Peach in every respect, except that the skin is perfectly smooth, of a waxen appearance, and the flesh generally more firm; although of the same genus as the Peach, which is so plentiful in this country, the fruit of the Nectarine is quite a rarity, and seldom appear in our markets. There are seventy-two varieties cultivated in the Horticultural Garden of London; and Nicol says, that “no varieties of the Nectarine are at present known to have originated in North America, except the Boston.”

It is generally allowed that their failure is occasioned by the attacks of insects. The most efficacious method that I have heard of, for securing any thing like a crop of Nectarines, is to fumigate the trees in the evening, when the air is calm and serene, at the season when the fruit is ready to set, see page 175 to 180. Tobacco is the most effectual antidote for insects; but a friend of mine collected a quantity of salt hay that

had been used as a covering for his spinach, the preceding winter; with this he created a smoke, first on one side of his plantation, and afterwards on the other, by which means he obtained a good supply of fruit. Our enterprising horticulturist, Mr. Wm. Shaw, has succeeded in gathering fine fruit, by pursuing the English plan, namely, in training his trees against a close fence; and it has been discovered by others, that the Nectarine, like the Grape Vine, will yield best in sheltered situations. That eminent horticulturist, Mr. David Thomas, observes, that "a vast quantity of fruit is naturally destroyed by a worm, which causes the Plum, Apricot, and Nectarine prematurely to drop from the tree. To prevent this loss, let the tree, after the blossoms fall, be frequently shaken by a cord connected with a swinging door, or with a working pump-handle, &c.; or let the bugs be jarred from the tree and killed. Or keep geese or pigs enough in the fruit garden to devour all the damaged fruit as it falls. We know that this last method is infallible."

As some may object to shaking or jarring fruit trees, for fear of disturbing the fruit, such may be reminded, that if the blossoms set more fruit than can be supported, it will not come to full perfection, and the trees may be injured in their future bearing; for these reasons, when fruit sets too thick, it should be thinned in an early stage of its growth.

The Nectarine is generally budded on stocks of the same species, or on Peach or Plum, two or three years old. Knight recommends growing Almond stocks for the finer kinds of Nectarines and Apricots, as likely to prevent the mildew, and as being allied to the Peach. Dubreuil recommends a Plum stock for clayey soils, and the Almond for such as are light, chalky, or sandy. The same opinion is held by the Montreuil gardeners. The Flemish nurserymen graft both the Peach and Nectarine on the Myrabella Plum, a very small cherry-shaped fruit.

The budding may be performed in July or August, in the side of the stock, which will, if properly manag-

ed, shoot the following spring, and attain the length of three or four feet in a summer's growth. After the budded trees have ripened the first year's shoots, they may either be planted where they are to remain, or retained in the nursery for two, three, or four years, till in a bearing state. Whether the plants be removed into the orchard at a year old, or remain in the nursery, the first shoots from the bud must be headed down in a judicious manner, in order to promote the most desirable form: In annual pruning, thin out superfluous branches and dry wood, and shorten the bearing shoots.

Nectarines may be trained to a close fence or wall in private gardens; in which case, such plants should be chosen as are budded low. See Apricot, page 191.

ORANGE, LEMON, &c. ORANGER, CITRONIER,
&c. *Citrus.*

Notwithstanding this fruit, and also the Lemon, Lime, &c., is attainable at all seasons of the year, by supplies from the Southern States, the West Indies, and the south of Europe, yet the plants are entitled to our notice on account of their being so easily cultivated, and from their affording an ornament in exhibiting their fruit the whole of the year.

The Orange, as well as others of the same genus, is generally cultivated as a green-house plant, but may be kept in a light room throughout our severe winters, provided the temperature is not suffered to be below the freezing point, 32. Its recommendations are, handsome evergreen, shining tree-like forms; most odoriferous flowers, and brilliant, fragrant, delicious fruits, which succeed each other perpetually, and are not unfrequently seen on the tree at the same time, in two or three stages of growth. A work has recently been published at Paris, edited by Messrs. Risso and Poiteau, which contains engravings and descriptions of

one hundred and sixty-nine varieties. They are arranged as sweet Oranges, of which they describe 42 sorts; bitter and sour Oranges, 32 sorts; Bergamots, 5 sorts; Limes, 8 sorts; Shaddocks, 6 sorts; Limes, 12 sorts; Lemons, 46 sorts; Citrons, 17 sorts.

All the species of *Citrus* endure the open air at Nice, Genoa, and Naples, but at Florence and Milan, and often at Rome, they require protection during the winter, and are generally placed in conservatories and sheds. In England, these trees have been cultivated since 1629; they are generally planted in conservatories. Loudon says, that in the south of Devonshire, and particularly at Saltcombe, may be seen, in a few gardens, Orange trees that have withstood the winter in the open air upwards of a hundred years. The fruit is as large and fine as any from Portugal. Trees raised from seed, and inoculated on the spot, are found to bear the cold better than trees imported. At Nuneham, near Oxford, are some fine old trees, planted under a moveable case, sheltered by a north wall. In summer, the case is removed, and the ground turfed over, so that the whole resembles a native Orange grove. The author, being a native of Abingdon, which is within three miles of the Earl of Harcourt's estate at Nuneham, has had frequent opportunities of tasting the fruit, which he believes to be equal to that of warmer climates. At Woodhall, near Hamilton, trees of all the species of *Citrus* are trained against the back walls of forcing houses, and produce large crops of fruit. Any of the varieties of the Orange, Lemon, Lime, Shaddock, Citron, &c. may be grafted or budded on stocks of the common Orange or Lemon; but the seeds of Shaddocks and Citrons produce the strongest stocks; and on these may be engrafted such kinds as may be needed for a conservatory. The most suitable time for budding, is July and August; but this operation may be performed at any time when the sap is in motion. The directions for the management of green-house plants, page 144, apply to this family of plants, to which I refer my readers. A friend of mine, who is a native of

Rouen, in Normandy, informs me, that a Mr. Valee of that city, succeeds in clearing about twelve thousand francs per annum from the flowers of Orange trees, which are distilled for essences, &c.

PEACH. PECHER. *Amygdalus Persica.*

It is generally considered that the Peach is of Persian origin. In Media, it is deemed unwholesome; but when planted in Egypt, becomes pulpy, delicious, and salubrious. It has been cultivated, time immemorial, in most parts of Asia; when it was introduced into Greece, is uncertain. The best Peaches in Europe are supposed to be grown in Italy on standards.

The list of Peaches in the London Catalogue, contains two hundred and twenty-four names, fifty of which are denominated American Peaches. Several attempts have been made to class the varieties of Peaches and Nectarines by the leaf and flower, as well as the fruit. Mr. Robertson, a nurseryman at Kilkenny, has founded his arrangement on the glands of the leaves; and Mr. George Lindley of London, has, in a peculiarly distinct manner, arranged no fewer than one hundred and fifty-five sorts of Peaches and Nectarines in well defined divisions and sections. There are various instances on record (Hort. Trans. Vol. I., p. 103,) of both fruits growing on the same tree, even on the same branch; and one case has occurred of a single fruit partaking of the nature of both. The French consider them as one fruit, arranging them in four divisions; the *Pêches*, or free stone Peaches; the *Pêches lisses*, or free stone Nectarines, or free stone smooth Peaches; the *Pavies*, or cling-stone Peaches; and the *Brognons*, or Nectarines, or cling-stone smooth Peaches.

Although this fruit will thrive in any sweet pulverized soil that is properly prepared, a rich sandy loam is the most suitable. Next to the selection and preparation of a suitable soil, a choice of good healthy trees is of the

utmost importance. The seed for stocks should be selected from the fruit of vigorous growing, young, or middle aged healthy trees ; and the buds should be taken from some of the choicest fruit-bearing trees that can be found. Let the stocks be fairly tested before they are budded, and if any infection exist in the stocks, or in the vicinity of where the choice of buds may fall, reject them, if you wish to rear a healthful progeny ; as more depends on these particular points than many are aware of.

In this country, the Peach is generally budded on stocks of its own kind, but in England it is often budded on damask Plum stocks, and some of the more delicate sorts on Apricot stocks, or old Apricot trees cut down ; or on seedling Peaches, Almonds, or Nectarines. See article Nectarine, page 233. Cobbet says, “ there are thousands of Peach trees in England and France that are fifty years old, and that are still in vigorous fruitfulness.” He attributes the “ swift decay of the Peach tree here to their being grafted on stocks of their kind.”

Care should be taken to keep the trees clear of insects, by washing, fumigation, &c. ; see article, page 174. A celebrated horticulturist, Mr. David Thomas, very justly remarks, in page 29 of the 5th volume of the New-York Repository, that “ could the insect Curculio species be satisfied with three fourths of all the fruit that set on our trees, we should be great gainers by keeping such a fellow in our employment ; for the fruit would be larger, and far more delicious. But we cannot restrain him within reasonable bounds, and we must be content to thin it on the branches by our thumbs and fingers. This is an important operation. Without it, several varieties of these fruits are not fit for the table ; and it is remarkable, that if the super-numeraries are removed even so late as not visibly to affect the size of the remainder, still their flavour will be greatly improved. Last season, our *gros mignon* Peach tree was over-loaded, and the fruit comparatively insipid ; yet after much the greater part had dropped

in the due course of ripening, we found the gleanings to be really fine."

As these and similar points are too little attended to, I prefer giving entire extracts from the writings of eminent horticulturists, to which I would strenuously invite the attention of my readers, in every instance. All the varieties of the Peach and Nectarine produce the fruit upon the young wood of a year old, the blossom buds rising immediately from the eyes of the shoots. The same shoots seldom bear after the first year, except on some casual small spurs on the two years' wood, which is not to be counted upon. Hence the trees are to be pruned as bearing entirely on the shoots of the preceding year, and a full supply of regular grown shoots must be retained for successional bearers. Cut out the redundant shoots, and all decayed and dead wood, and reduce some of the former bearers, cutting the most naked quite away.

A Peach Orchard may be planted at any time after the bud is established, until the trees are three or four years old, which may be placed from fifteen to twenty feet from each other, or from any other spreading trees. The dwarf kinds may be introduced into the kitchen garden, and trained against fences, as directed for the Apricot, or as espaliers, or dwarf standards.

PEAR. POYRE. *Pyrus*.

The Pear tree, in its wild state, is thorny, with upright branches, tending to the pyramidal form, in which it differs materially from the Apple tree. The twigs or sprays hang down; the leaves are elliptical, obtuse, serrate; the flowers in terminating, villose corymbs, produced from wood of the preceding year, or from buds gradually formed on the several years' growth, on the extremities of very short protruding shoots, technically called spurs. It is found in a wild state in Eng-

land, and abundantly in France and Germany, as well as in other parts of Europe, not excepting Russia, as far north as lat. 51. It grows in almost any soil. The cultivated tree differs from the Apple, not only in having a tendency to the pyramidal form, but also in being more apt to send out tap roots; in being, as a seedling plant, longer (generally from fifteen to eighteen years) of coming into bearing; and when on its own root, or grafted on a wild Pear stock, of being much longer lived. In a dry soil, it will exist for centuries, and still keep its health, productiveness and vigour. There are fewer good sorts of Pears in proportion to the number of current varieties, than Apples. The Romans had thirty-six varieties in Pliny's time; there are now several hundreds in the French and British nurseries; the London Horticultural Catalogue contains the names of six hundred and twenty-two. Professor Van Mons, of Brussels, and M. Duquessie, of Mons, fruited about eight thousand seedling Pears, from which they obtained nearly eight hundred sorts worth cultivating, (Neil's Hort. Jour.) The varieties are divided by the French into different classes of fruits, which are designated as *Beurrees*, *Crevers*, and *Poiree*, &c.

Criterion of a good Pear.—Dessert Pears are characterized by a sugary aromatic juice, with the pulp soft and sub-liquid, or melting, as in the *Beurrees*, or butter Pears; or of a firm and crisp consistence, or breaking, as in the winter *Bergamots*. Kitchen Pears should be of a large size, with the flesh firm, neither breaking nor melting, and rather austere than sweet. Perry Pears may be either large or small; but the more austere the taste, the better will be the liquor; excellent perry is made from the wild Pear.

Pear trees are raised from seed taken from the best sorts, for the purpose of obtaining new varieties, or for producing Pear stocks. In raising Pears for stocks, the wild Pear is preferred in Europe, as being calculated to produce plants more hardy and durable than the cultivated sorts; and for dwarfing and precocity, the Quince is preferred.

The Pear is a much handsomer upright growing tree than the Apple ; more durable, and its wood hard and valuable for the turner and millwright ; but its blossoms being white, are less showy than those of the Apple. A Pear Orchard may be planted at any time after the trees are two years old from the graft ; and as trees from young stocks will not come into full bearing until ten or twelve years old, they will bear removing with care at any time within that period. They may be planted at from twenty to thirty-five feet distance from each other, according to the nature of the tree. The dwarf varieties may be planted in the kitchen garden, and trained either as espaliers or dwarf standards. Pear trees will require but little pruning after the heads are once formed ; in doing which, the branches should be permitted to extend on all sides freely. Several years may elapse before any cross-placed, very irregular, or crowded branches require pruning ; yet there are some kinds whose form of growth resembles the Apple ; such will need frequent pruning. "The Pear tree," Mr. Phail says, "does not produce blossoms on the former year's wood, as several other sorts of trees do. Its blossom buds are formed upon spurs growing out of wood over one year old, and consequently projecting spurs all over the tree, must be left for that purpose." In some pears, Knight observes, "the fruit grows only on the inside of those branches which are exposed to the sun and air ; in others, it occupies every part of the tree." Withering says, that the French make perry, or *poire*, from the fermented juice of the Pear, which is little inferior to wine ; and that even the bad eating kinds, pared and dried in the oven, will keep several years with or without sugar.

PLUM. PRUNIER. *Prunus*.

The Plum tree rises fifteen feet in height, branching into a moderately spreading head ; the leaves are ovate,

serrated and on short petioles ; petals white. The natural colour of the fruit is generally considered to be black ; but the varieties in cultivation are of yellow, red, blue, and green colours, and of different forms and flavours. There are several good sorts grow wild in the hedges of Britain, and also in America, but its original country is supposed to be Asia ; and according to Pliny, it was taken from Syria into Greece, and from thence into Italy. There are many varieties cultivated in France, and in the London Horticultural Garden there are two hundred and ninety-eight sorts kept under name. The green Gage is considered the best dessert Plum, and the Wine-sour for sweetmeats ; but the Damson is the best baking Plum.

The Plum is said to succeed best in a lofty exposure, and may yield well in the mountainous parts of the United States ; it yields well near Albany, but the fruit is by no means plentiful in the vicinity of the city of New-York. Like the Nectarine, it is subject to the attacks of insects. A correspondent, signed D. T., in a communication to the editor of the New-York Farmer, page 60 of the third volume, remarks, that " it has long been observed that Plum trees growing in frequented lanes, or barn-yards, were generally fruitful, while those in secluded situations, as in gardens, were more rarely productive." The late Dr. Tilton has shown that the treading of live stock round the trees, made it not only more difficult for the worm to penetrate the ground, but that his escape from the fallen fruit was rendered precarious by the approach of swine, eager to convey his habitation and him in a different direction.

It is also stated that the Curculio is a timid *animal* ; that the passing of live stock round the trees alarmed him ; and we know that rubbing of swine and cattle, or any sudden jar, causes it instantly to drop to the ground. In accordance with these facts, some have kept their hogs among their Plum trees ; and a friend lately told me, that in consequence, his Plum trees had borne double during the last twelve years. This plan

is much to be recommended among large trees ; but well grown and well fed hogs become wanton, and I have several small trees greatly injured by their teeth, and by their rubbing. Neither will their rooting make amends for the trampling of the ground near small trees in wet weather ; I have, therefore, determined to discharge these gentry during summer, and chiefly trust the management of the fruit garden to the geese. Last season, I was much pleased with the activity of these birds ; scarcely a fallen Plum escaped them, which they swallow without difficulty, and the worm is every moment in danger.

Many trees stand in gardens, however, where neither swine nor geese can be admitted ; and in such cases, I would suggest the trial of a plan by which I destroyed hundreds of these insects. Two large sheets made of cheap factory cotton, were laid slightly to over-lap with the tree at the centre. A stroke of the hand for a small tree, or of a mallet for a large one, causes the *Curculio* instantly to drop on the sheet. The dark brown colour of the insects contrasts with the white cloth, and it may at once be discovered, and easily destroyed. Though it may seem inanimate, it will almost imperceptibly slide under the dead blossoms that fall with it, and it then requires care to detect it. This process is expeditiously performed by five persons, two to each sheet, and one to strike the tree. I have strong hopes from this experiment ; and to begin with the dropping of the blossoms, and to visit the trees two or three times a day for several weeks, would probably prevent any serious injury to the crop, and reduce these insects to a scanty remnant. New varieties of the Plum are produced from seed ; and the old kinds are generally propagated by buddings on stocks of free growing Plums, in preference to grafting, because Plum trees are very apt to gum wherever large wounds are made in them. All the sorts produce their fruit on small natural spurs rising at the ends and along the sides of the bearing shoots of one, two, or three years growth. In most sorts, new fruit branches are two years old be-

fore the spurs bear. The same branches and spurs continue fruitful in proportion to the time which they take to come into bearing. After the formation of the head is begun, it takes from two to six years before the different sorts come into bearing. Standards must be allowed to expand in free growth, occasionally pruning long ramblers and irregular cross branches. In annual pruning, thin crowded parts; cut away worn out bearers, and all decayed and cankered wood. The Plum may be cultivated in small gardens, trained as espaliers, or to a close fence, like the Apricot, &c. The tree is of further use than for its fruit as a dessert, &c.; the bark dyes yellow; the wood is used by the turners; and the dried fruit, or prune, is formed into electuaries and gentle purgatives. Prunes were originally brought from Damascus, whence their name. Cobbett attributes the scarcity of Plums in New-York to neglect. In his American Gardener, paragraph 320, he asks, "how is it that we see so few Plums in America, when the markets are supplied with cart-loads in such a *chilly, shady, and blighty* country as England?"

QUINCE. COIGNASSIER. *Cydonia*.

The quince is of low growth, much branched, and generally crooked and distorted. The leaves are roundish or ovate, entire, above dusky green, underneath whitish, on short petioles. The flowers are large, white, or pale red, and appear in May and June; the fruit, a pome, varying in shape in the different varieties, globular, oblong, or ovate; it has a peculiar and rather disagreeable smell and austere taste. The fruit takes its name from its being a native of the ancient town of Cydon, in the Island of Crete; some suppose it to be a corruption of *Malus cotonea*, by which the Latins designated the fruit. It is used as a marmalade for flavouring Apple pies, and making an excellent

sweetmeat ; and it has the advantage over many other fruits for keeping, if properly managed. Of the several sorts, the following are in greatest esteem : 1. The oblong, or Pear Quince, with oblong ovate leaves, and an oblong fruit lengthened at the base. 2. The Apple Quince, with ovate leaves, and a rounder fruit. 3. The Portugal Quince, the fruit of which is more juicy and less harsh than the preceding, and therefore the most valuable. It is rather a shy bearer, but is highly esteemed, as the pulp has the property of assuming a fine purple tint in the course of being prepared as a marmalade. 4. The mild or eatable Quince, being less austere and astringent than the others.

The Quince produces the finest fruit when planted in a soft moist soil, and rather shady, or at least sheltered situation. It is generally propagated by layers, and also by cuttings, and approved sorts may be perpetuated by grafting. In propagating for stocks, nothing more is necessary than removing the lower shoots from the layer, so as to preserve a clear stem as high as the graft ; but for fruit bearing trees, it is necessary to train the stem to a rod, till it has attained four or five feet in height, and can support itself upright. When planted in an Orchard, the trees may be placed ten or twelve feet apart. The time of planting, the mode of bearing, and all the other particulars of culture, are the same as for the Apple and Pear. The chief pruning they require, is to keep them free from suckers, and cut out decaying wood.

RASPBERRY, &c. FRAMBOISIER, &c. *Rubus*.

There are several species of the *Rubus* found wild in various parts of Asia, Europe, and America, some of which have upright stems, others prostrate ; the American Stone Bramble, and also the common Blackberry, Dewberry, Cloudberry, &c. are of this fa-

mily. The *Rubus idaeus*, or common Raspberry, grows spontaneously in the province of New Brunswick, and in various parts of the United States, but most of the cultivated varieties are supposed to have originated in England. Loudon describes the true Raspberry as having stems which are suffructicose, upright, rising to the height of several feet, and are biennial in duration; but the root is perennial, producing suckers which ripen and drop their leaves one year, and resume their foliage, produce blossom shoots, flower, and fruit, and die the next. The leaves are quinate-pinnate; the flowers come in panicles from the extremity of the present year's shoots; they are white, appear in May and June, and the fruit ripens about a fortnight afterwards.

The fruit is grateful to most palates, as nature presents it, but sugar improves the flavour; accordingly, it is much esteemed when made into sweetmeats, and for jams, tarts, and sauces. It is fragrant, subacid, and cooling; allays heat and thirst. It is much used in distilling; Raspberry syrup is next to the Strawberry in dissolving the tartar of the teeth; and as, like that fruit, it does not undergo the acetous fermentation in the stomach, it is recommended to gouty and rheumatic patients.

Nicol enumerates twenty-three species and varieties of the cultivated Raspberry, and twenty-one of the *Rubus ronce*, or Bramble; of the latter, is included the American red and black Raspberry, and the Long Island and Virginian Raspberry. The English varieties are, early Small white; Large white; Large red; most Large red Antwerp; Large yellow Antwerp; Cane or smooth stalked; Twice bearing white; Twice bearing red; Smooth cane, twice bearing; Woodward's Raspberry. Prince's Catalogue contains twenty-seven names, amongst which are, Brentford red; Brentford white; Flesh coloured; Barnet red, fine; Pennsylvania; Cretan red; Prolific red; Canada purple rose flowering, &c. The varieties can be perpetuated by young sucker shoots, rising plenteously from the root in spring and summer; when these have completed one

season's growth, they are proper to detach with roots for planting, either in the autumn of the same year, or the next spring, in March or early in April. These new plants will bear some fruit the first year, and furnish a succession of strong bottom shoots for full bearing the second season. New varieties are raised from seed, and they come into bearing the second year.

Raspberry beds are in their prime about the third and fourth year ; and if well managed, continue in perfection five or six years, after which they are apt to decline in growth, and the fruit to become small, so that a successive plantation should be provided in time. Select new plants from vigorous stools in full perfection as to bearing. Be careful to favour the twice bearers with a good mellow soil, in a sheltered situation, in order that the second crop may come to perfection.

When Raspberries are cultivated on a large scale, it is best to plant them in beds by themselves, in rows from three to five feet apart, according to the kinds. In small gardens they may be planted in detached stools, or in single rows, in different parts of the garden, from the most sunny to the most shady aspect, for early and late fruit of improved growth and flavour.

It is requisite to cut out the dead stems early in the spring, and to thin and regulate the successional young shoots ; at the same time, the shoots retained should be pruned at the top, below the weak bending part, and some rotten dung worked in around the roots of the plants. Keep them clear of weeds during the summer, by hoeing between the rows ; at the same time eradicate all superfluous suckers, but be careful to retain enough for stock in succeeding years.

STRAWBERRY. FRAISIER. *Fragaria*.

This is a genus of fruit bearing herbaceous plants, of which there are few in the vegetable kingdom that can

equal the Strawberry in wholesomeness and excellence. The fruit is supposed to receive its name from the ancient practice of laying straw between the rows, which keeps the ground moist and the fruit clean. They are natives of temperate or cold climates, as of Europe and America. The fruit, though termed a berry, is, in correct botanical language, a fleshy receptacle, studded with seeds. It is universally grateful alone, or with sugar, cream, or wine, and has the property, so valuable for acid stomachs, of not undergoing the acetous fermentation. Physicians concur in placing Strawberries in their small catalogue of pleasant remedies; they have properties which render them, in most conditions of the animal frame, positively salutary; they dissolve the tartareous incrustations of the teeth; they promote perspiration. Persons afflicted with the gout, have found relief from using them very largely; so have patients in cases of the stone; and Hoffman states that he has known consumptive people cured by them. The bark of the root is astringent.

In cultivating the Strawberry, an open situation and rich loamy soil, rather strong, is required for most varieties; and from their large mass of foliage and flowers, they must, till the fruit is set, have copious supplies of water. The row culture is best calculated to produce fruit; and frequent renewal insures vigorous plants as well as large fruit. Some make beds of single rows from twelve to eighteen inches apart, according to the sorts; others form a bed with two rows eighteen inches asunder. If several beds be intended, a space of two feet may be left between each bed as a path; and in the second or third season, the paths may be manured and dug, to admit of the runners taking root; by this means, a renewal may be made so often, and the old stools being taken away, leaves spaces between the beds as before. Or new plantations may be made every season; as after the roots are fairly established, they multiply spontaneously every summer, as well by suckers from the parent stem, as by the numerous runners; all of which, rooting and forming a plant at every joint, require only

removal to a spot where there is room for them to flourish. If taken off and planted in rows in August and September, they will produce fine fruit the following season, and will bear in full perfection the second summer. A plantation of the Alpine yields fruit the same year that it is made. The Wood and the Alpine come regularly from seed, from which finer fruit may be produced than from offsets. The other species are uniformly propagated by offsets, except the intention be to try for new varieties. The Alpine and Wood species may be planted in situations rather cool and shady, in order that they may produce their fruit late in the season, which is desirable. The Strawberry, with a little trouble of choosing a succession of sorts, may be forced so as to be had at the dessert every month in the year; though during the winter months they have not much flavour.

Some gardeners lay straw an inch or two thick over their beds in March, and set fire to it, in order to promote a stocky growth of plants and early fruit; others recommend mowing off the tops of such plants as are not required to fruit early, while they are in blossom, with a view to obtain a crop of Strawberries late in the season. The London Horticultural Catalogue contains the names of one hundred and twenty-one varieties of all the species; which are classed according to their nature, colour, &c. Class 1. Scarlet Strawberries; 2. Black Strawberries; 3. Pine Strawberries; 4. Chili Strawberries; 5. Hautbois Strawberries; 6. Green Strawberries; 7. Alpine and Wood Strawberries. To select all the most esteemed from this or any other extensive catalogue, is a difficult task; the following description of species and varieties may serve to direct the choice:

1. The Wood Strawberry, (*Fragaria vesca*,) with oval serrated leaves; the fruit red, white, and green, which is round and small. A native of Britain.

2. The Scarlet, (*Fragaria Virginiana*,) with leaves like the preceding; the fruit roundish and scarlet coloured. A native of Virginia. Varieties, Early Scarlet,

Wilmot's late, Common late, Wilmot's cockscomb scarlet.

3. The Roseberry, (*Fragaria virg. var.*) an Aberdeen seedling introduced in 1810. The plants have few roundish leaves; larger fruit than the scarlet, and are very prolific; continues bearing till August.

4. The Downton, (*Fragaria virg. var.*) The fruit is large, irregular, and cockscomb-like; leaves large; plant hardy and prolific.

5. The Carolina, (*Fragaria Carolinensis*,) colour red; a native of America.

6. The Musky, or Hautbois, (*Fragaria elatier*,) with oval rough javelin-edged leaves; the fruit large, of a pale red colour; a native of Britain.

7. The Chili, (*Fragaria Chiliensis*,) with large, oval, thick, hairy leaves, and large flowers; the fruit large and very firm; a native of South America.

8. Keen's Imperial, or new Chili, (*Fragaria Chil. var.*) raised by Mr. Keen, of Isleworth, a most excellent bearer, ripening early. The fruit is very large; the flesh firm and solid, without any separable core; colour scarlet.

9. The Pine, (*Fragaria grandiflora*,) the leaves small and delicate. There are two sorts, the red and the white, or greenish tinted, of this most rich flavoured fruit. Knevet's seedling produces large fruit of excellent flavour.

10. The Alpine, or Prolific, (*Fragaria collina*,) which commonly lasts from June till November, and in mild seasons, till near Christmas; two sorts of the fruit, the red and the white. Alps of Europe.

11. The one leaved, (*Fragaria monophylla*,) the pulp of the fruit, pink-coloured; a native of South America.

12. The Grove End scarlet Strawberry, a seedling raised by Wm. Atkinson, Esq. in his garden at Grove End Marylebone, in the year 1820; an excellent bearer, ripening its berries early and in succession.

All the species and varieties of this fruit are highly estimated in Britain, where they are cultivated in great

perfection. Berries have been known to weigh from one to two ounces, which have been grown to the circumference of eight inches and upwards. It may be gratifying to the lovers of this excellent fruit, to be informed that some of the best kinds are attainable here. Messrs. Prince, Floy, Wilson, and others, are introducing some of the choicest kinds into their nurseries; and one of our patriotic fellow-citizens, Jesse Buel, Esq., of the Albany Nursery, informs us in the Albany Argus of June 23, 1830, that he has grown the Downton (a variety of the Chili crossed by Mr. Knight,) two years in succession, $4\frac{3}{4}$ inches in circumference. He said he picked a pail that morning of the Methven scarlet Strawberry, which had an average circumference of three inches each. Several measured four inches, and one four and a quarter inches. Sixty-three, divested of the calyx, weighed a pound, which is a trifle more than four to the ounce. Several of the choicest kinds have been lately transplanted from the London Society's garden into the Albany Nursery.

WALNUT. NOYER. *Juglans*.

From the circumstance of our having an abundance of the fruit, from the many species of this genus of trees growing spontaneously around us, it is presumed that the culture of the *Juglans regia*, commonly called English Walnut, or Madeira Nut, has been neglected by many of our citizens. It is a native of Persia, and is cultivated in France, England, and in other parts of Europe, both as a fruit and timber tree. The fruit in England is much used in a green state for pickling, and also as an adulteration of soy sauce. In France, an oil which supplies the place of that of Almonds, is made from the kernel. In Spain, they strew the gratings of old and hard nuts, first peeled, into their tarts and other meats. The leaves strewed on the ground, and left

there, annoy worms or moles, or macerated in warm water, afford a liquor which will destroy them. The unripe fruit is used in medicine for the purpose of destroying worms in the human body. Pliny says, "the more Walnuts one eats, with the more ease will he drive worms out of the stomach." The timber is considered lighter, in proportion to its strength and elasticity, than any other, and therefore commonly used in England for gun-stocks. It is used in cabinet work in most parts of Europe; the young timber is allowed to make the finest coloured work, but the old to be finest variegated for ornament. When propagated for timber, the nut is sown; but when fruit is the object, inarching from the branches of fruit-bearing trees is preferable. Budding is also practiced by some; the buds succeed best when taken from the base of the annual shoots; ordinary sized buds from the upper part of such shoots generally fail. Walnut trees that have not been grafted or budded, may be induced to produce blossoms by ringing the bark, that is, cutting out a streak of the bark around the body or main branches of the tree. Walnut trees seldom yield much fruit until fifteen or twenty years old; it is produced on the extremities of the preceding year's shoots. The trees should stand forty or fifty feet apart, and they may be permitted to branch out in their natural order. They need but little pruning, merely to regulate any casual disorderly growth, to reduce over-extending branches, and to prune up the low stragglers.

Lest any of our native Walnuts should be neglected or abandoned by any, I annex a description of the different kinds:

Juglans catharticus, is known under the name of Butternut, Oilnut, and white Walnut; these nuts are used by the Indians as a medicine.

Juglans nigra, the black Walnut, is a tree of large size; its fruit is known to be excellent.

Juglans olivueformis, Pecan or Illinois nut, is delicious. The nuts of *Juglans sulcata*, which is called thick shell bark, Hickory, and Springfield, and Glou-

cester nut, are large and well tasted. The shell bark Hickory, shag bark, or scaly bark Hickory, *Juglans alba*, is so called on account of its bark, which is torn lengthwise in long loose strips, as in *J. sulcata*. The *Juglans tomentosa*, the Mucker nut, white heart Hickory, or common Hickory, and most of the other kinds enumerated are worth preserving ; or cultivating where there is none, for its timber for mechanical purposes ; and that of the *Juglans glabra*, or Hog nut, is useful for brooms, &c.

WHORTLEBERRY. AIRELLE. *Vaccinium*.

Of the species of this genus, the berries of many are known to furnish materials for tarts, not however so good as the genus *Oxycoccus*, or Cranberry, with the exception of *Vaccinium vitis Idaea*, which is the kind that bears what are called Cranberries in the Highlands of Scotland, and which are of very excellent quality. There are twenty three species and varieties of this family of plants cultivated in the Horticultural Garden at Chiswick ; and the Linnæan Botanic Garden Catalogue contains the names of twenty-five sorts, comprising the Deerberry, Bilberry, American Cowberry, &c. As many sorts of fruits, which only a few years ago were lightly esteemed, are now much cultivated, as being highly appreciated, it is necessary to introduce such plants into notice as are in the least calculated to add to the resources of the human species, it being generally admitted that culture will accomplish wonders.

The *Vaccinium myrtillus*, or Bilberry, is an elegant and also a fruit-bearing plant ; the young fresh green leaves and wax-like red flowers appear in May, and towards autumn the leaves grow darker and more firm. The ripe berries are used in England for tarts, and in Poland they are eaten with clotted cream. Withering says the berries are very acceptable to children, either

eaten by themselves, or with milk, or in tarts. The moor game live upon them in the autumn; the juice stains paper or linen purple. The berries have an astringent quality; and in Artorn and the Western Isles, are given in diarrhoeas and dysenteries with good effect. The Highlanders eat them with milk, and make them into tarts and jellies, which last they mix with whiskey, to give it a relish. The *Vaccinium ullignosum*, or great Bilberry, grows taller than the common Bilberry, and has large globular black, glaucous fruit. These have less flavour, but abound with a weak acid juice. Linn says, if the fruit be eaten in large quantities, it occasions giddiness and a slight headache, especially when full grown and quite ripe. Withering says, that many vintners in France are said to make use of the juice to colour their wines red. They furnish an ardent spirit, which is highly volatile and intoxicating.

The *Vaccinium vitis idaea* is of very humble growth, and almost herbaceous, though evergreen. The berries are red, acid, astringent, and bitter. They are scarcely to be eaten raw, and though made into pies in Derbyshire, where they are called Cowberries, their flavour is considered inferior to the Cranberry. "They are in great esteem in Sweden, prepared as a rob or jelly, which is eaten with roast meat, and is considered far preferable to currant jelly as a sauce for venison, &c. It is an excellent medicine in colds, sore throats, and all irritation of the mouth or fauces."—(Smith Brit. and Eng. Bot.) Dr. Clarke says that they are sent in large quantities from West Bothnew to Stockholm, for pickling.

The *Vaccinium tenellum*, or Pennsylvania blue berried Whortleberry, is a very good fruit. For a further description of the several species and varieties of this genus of plants, which are indigenous in America, as well as in Europe and Asia, the reader is referred to Prince's Catalogue of Fruit trees, &c. The mode of culture recommended for the Cranberry, is calculated to suit this description of plants also.

ON THE CHOICE OF FRUIT TREES IN THE NURSERY.

IN the choice of fruit trees, all possible care and attention is necessary ; for to have trees that do not answer the expectations of the proprietor is a great disappointment. As the young gardener may need such directions as are calculated to govern him in his choice, I shall endeavour to furnish them, Of whatever species or variety of fruit trees are wanted, choose those that are vigorous and straight, and of a healthy appearance. Whether they have been grafted or budded, be careful to select such as have been worked on young stocks. Grafts and buds inserted into old crooked stunted stocks, seldom succeed well. Trees that are healthy, have always a smooth, clean, shining bark ; such as are mossy, or have a rough wrinkled bark, or are the least affected by canker, should be rejected. Canker is discoverable in the young wood, and generally two or three inches above the graft or bud. If the tree be an Apricot, Nectarine, Peach or Plum, and any gum appears on the lower part of it, do not fix upon that. Let the tree you select (if a dwarf) be worked about six inches from the ground, and only one graft or bud should be upon each stock, for when there are more, the tree cannot be brought to so handsome a form.

In some of the preceding articles, I have shown that some description of trees may be transplanted with safety, even when far advanced in growth, When trees of four or five years' growth, after heading down, that are healthy and well furnished with fruit-bearing wood, close up to the centre of the tree, can be obtained, they will do very well ; but great care is requisite in taking up, removing and planting such. Let the tree be taken up with as great a portion of the roots as possible, taking care not to bruise, split, or damage them ; for want of attention to these points, trees often become diseased. Whenever (notwithstanding all due caution) any roots having been accidentally broken, split, or otherwise damaged in taking up the tree, let them be cut

off; or if they cannot be well spared, let the damaged or bruised part be pared clean with a sharp knife, and an application of the following composition be spread over the wound, in order to keep the wet from it, which would otherwise injure the tree. To equal parts of soft soap and tar, add a little bees' wax; let them be boiled together, and when cold, they may be used. The necessity of pruning-in and dressing mangled roots, is more particularly required in trees of the stone fruit, such as Apricots, Nectarines, Peaches, Plums, &c.; for without the application of some remedy, they gum at the roots, which defect, if not counteracted, very materially injures the upper part of the trees, which may become so affected as never to recover afterwards; therefore, great care should be taken not to occasion such injury; and when accidents happen, all due caution and application is necessary, to promote a healthy and vigorous growth.

A young tree, likely to do well, should have roots nearly corresponding to the branches, at least, it should have one strong root in a similar proportion to the bole of the tree, with a proper distribution of branching fibres. Healthy roots are always smooth and clear, the colour of them varies a little according to the sort of the tree, but the older the roots are, the darker the colour is.

After the tree is taken up, be careful in conveying it to the place where it is to be planted, so that the roots are not chafed or rubbed. If trees are to be conveyed a considerable distance, they should be well guarded by straw or otherwise, in order to prevent injury. All damaged bruised roots should be pruned as soon as the tree is taken up, but if it be necessary to prune away any sound good roots, such pruning should be delayed until the time of planting. In pruning away roots, always let them be finished by a clear cut, and in a sloping direction, letting the slope be towards the under stratum, so that the wet may not be allowed to lodge upon the part so cut. When trees are planted at an advanced season, in the spring of the year, it will be necessary to prune the tops; and if trees are removed

that have been trained three or four years, and are not properly supplied with young wood, they must be cut down either wholly or partially, in order to obtain a sufficiency. In practising this upon Apricot and Nectarine trees, &c., always prune so as to have a leading shoot close below the cut, as it is very rare they will push a shoot below, unless there be a lead. This attention is not so particularly required in the Pear, &c., as such will generally push forth shoots, although no leading ones were left: but in all kinds the younger the wood is, the more certain are shoots to be produced. If a tree that has been under training for one or two years, should have only one good strong leading shoot, and two or three weaker ones which do not proceed from it, let the weak shoots be pruned clean away, and shorten the strong one, from which a handsome head may afterwards be formed. For further directions, as respects pruning and planting fruit trees, &c., the reader is referred to the articles from page 165 to 188, on these subjects; and as respects any species of fruit in particular, directions will be found under its distinct head.

In order to assist the reader to make a judicious choice of fruit trees, I have furnished a short description of such sorts as can be best recommended. Previous to making this selection, I carefully perused "Prince's Pomological Manual," also such parts of "Kenrick's American Orchardist," and "Lindley's Guide to the Orchard and Kitchen Garden," as was applicable to my subject; besides these important guides, I had the select catalogues of different nurserymen before me, and have chosen such only as have been most generally recommended; in doing this, I have had difficulties to contend with, the nature of which none but those who have duly considered the subject can form any idea. The facility with which seedling plants are raised, and the paternal fondness with which people are apt to regard their own seedlings, have occasioned hundreds of names to appear in the various catalogues

which tend not a little to swell the large and increasing list of fruits.

In many instances, the English, French, Spanish and other names, provisional, local, and barbarous, are given to the same variety, consequently some fruits appear in the different catalogues under all the varied names; and the patience and labour necessarily requisite for ascertaining what are worthy of cultivation, and what are really distinct varieties, is correspondingly great.

The annexed list and description of the first fifty varieties of apples, was politely furnished by William R. Prince, Esq., author of the "Pomological Manual," "Treatise on the Vine," &c.; in making out the other lists, I have generally adopted the names given in the catalogue of Michael Floy and Sons of the Harlaem Nursery, as a heading; and have caused the synonyms or names by which the same variety is known or has been called, to be printed in italics, thus, my lists of about 300 varieties of the various sorts of fruit, will embrace what has been deemed by some, as different varieties, perhaps to the number of a thousand.

APPLES.

1. JUNE EATING, *Juniting, or Geniton*.—The fruit is small, of a roundish form, and yellow colour; it ripens in July; the pulp is tender and juicy; the tree a good bearer, and of small, low growth.

2. EARLY RED MARGARET, *or red June eating*.—The fruit is small and roundish; colour red striped; the pulp sweet, and of pleasant flavour; it ripens in July.

3. SPRING GROVE.—The fruit small, and of a conical form, and pale green colour; it is ripe in July, and continues till September; the pulp is soft and juicy; tree hardy, a great bearer, and the fruit chiefly used in the kitchen.

4. PRINCE'S YELLOW HARVEST.—The fruit of a medium size, depressed; of a pale yellow colour; the pulp is tender, slightly acid, but of an excellent flavour; ripens in July.

5. SINEQUANON.—The fruit of medium size, roundish, but somewhat depressed; of a greenish colour, and very high flavoured; ripe in July.

6. WHITE ASTRACAN.—The fruit is roundish, angular at the sides, of medium size; the colour whitish, faintly streaked with red on the sun side, and covered with a white bloom; it ripens in August, and the pulp is very tender, pleasant and delicate.

7. **GOLDEN PEARMAIN.**—The fruit large, roundish, and of a deep red and yellow colour; it ripens in August, and continues till October; pulp soft and sweet; a hardy tree, but not large; a good bearer, and the fruit much esteemed.

8. **SUGAR LOAF PIPPIN.**—The fruit of medium size, ovate, or oblong; of a pale yellow colour; the pulp firm, but juicy, and of a highly pleasant flavour; it ripens early in August.

9. **HAWTHORNDEN.**—The fruit is large, and rather flat, and of a pale green colour; it ripens in August, and continues till January; the pulp soft, juicy, and acid; a very hardy tree; a great bearer, and the fruit good for all kitchen purposes.

10. **RED AND GREEN SWEETING.**—The fruit large, of oblong shape; green colour, striped with red; ripens in August and September. The pulp is very sweet, tender, and of pleasant flavour.

11. **BORS DORF.**—Fruit medium size, conical form, and of a yellow green colour; it ripens in September, and continues till February; the pulp is firm, and of an aromatic flavour; tree of low growth, a middling bearer, but an excellent fruit for the table.

12. **FALL PIPPIN.**—The fruit very large, of a roundish shape; yellow colour; the pulp very tender, and of good flavour; ripens in September and October.

13. **OLD GOLDEN PIPPIN.**—The fruit small, roundish, and a gold yellow color; it ripens in September and October; flesh firm and sweet, fit both for the dessert and kitchen.

14. **PUMPKIN SWEETING.**—Fruit large, of pale yellow colour; pulp very sweet and pleasant; ripens in October and November.

15. **AMERICAN NONPAREIL.**—Fruit large and flat; colour yellowish ground, striped with red; pulp very tender, juicy, and high flavoured; ripens in October and November.

16. **NEWTOWN SPITZENBURG.**—The fruit of medium size, roundish and depressed; colour of a pale yellowish ground, greenish where shaded, but red next the sun; pulp very sweet, rich and pleasant; ripens in October and November.

17. **WOOD'S TRANSPARENT.**—Fruit small and flat, and of a green and yellow colour; ripens in October, and continues till February; flesh firm and juicy; hardy tree, great bearer, and excellent fruit.

18. **SWEET BOUGH.**—Fruit large, ovate, of pale yellow colour; tender, sweet, and pleasant in flavour; ripens in August.

19. **RIBSTONE PIPPIN.**—Fruit of medium size, roundish, and partially depressed; of a pale yellow colour, tinged with red; pulp slightly acid, and of fine flavour; ripens in November, and continues till April.

20. **RHODE ISLAND GREENING.**—Fruit large and depressed, of a greenish colour; slightly acid, and of fine flavour; ripens in November, and continues till April.

21. **HOLLAND PIPPIN.**—Fruit medium size, ovate form, and of a gold and green colour; it ripens in October, and continues till February; flesh crisp and firm; tree hardy and large; a good bearer, and much esteemed fruit.

22. **SEEK NO FURTHER.**—Fruit of medium size, depressed ; of a whitish colour ; flesh very tender, and of pleasant flavour ; ripens in November, and continues till March.

23. **ESOPUS SPITZENBURG.**—Fruit large and oval ; of red colour ; flesh yellowish ; slightly acid, and of the finest flavour ; ripens in October, and continues till February.

24. **PENNOCK RED WINTER.**—Fruit very large and compressed ; of deep red colour ; flesh tender, juicy, and of sweet and pleasant flavour ; ripens in November.

25. **FLUSHING SPITZENBURG.**—Fruit large, roundish, somewhat compressed ; red striped colour, and of sweet and pleasant flavour ; ripens in November, and continues till March.

26. **RED WINTER SWEETING.**—Fruit large and compressed ; of reddish colour ; and of sweet and delicious flavour ; ripens in November, and continues till March.

27. **GREEN NEWTOWN PIPPIN.**—Fruit medium size, compressed ; of pale green colour ; flesh very high flavoured ; ripens in December, and keeps till June.

28. **BRINGEWOOD PIPPIN.**—Fruit small, nearly globular ; colour bright yellow, tinged with red, pulp exceeding sweet, and highly perfumed.

29. **DOWNTON PIPPIN.**—Fruit of moderate size, cylindrical, flattened at the ends ; of yellow colour, with numerous specks ; flesh firm, rich and subacid ; ripens in October and November.

30. **ENGLISH NONPAREIL.**—Fruit of medium size, and flat ; of a greenish yellow colour, with a slight russet ; flesh firm, rich and aromatic ; ripens in November, and continues till May.

31. **FENOUILLET GRIS.**—Fruit rather small, roundish, ovate, of a yellowish gray colour, with a slight russet ; pulp tender, saccharine, and high flavoured ; ripens in November, and continues good till February.

32. **RED WINTER CALVILLE.**—Fruit large and oblong, of a pale red colour, deeper next the sun ; flesh tender and of pleasant flavour ; ripens in November.

33. **DREDGE'S BEAUTY OF WILTS.**—Fruit medium size and oval form, of a bright yellow, spotted with red ; it ripens in October, and lasts till March ; pulp firm and juicy ; a great bearer, and the fruit good for all kitchen purposes.

34. **ORTLEY PIPPIN.**—Fruit of large size, pale yellow colour, often a tinge of red on the sunny side ; flesh firm and high flavoured ; ripens in November, and lasts till April.

35. **LEMON PIPPIN.**—Fruit of medium size, oval shape ; colour yellowish green ; flesh firm, pleasant, but not high flavoured ; ripens in October, and lasts till March.

36. **BLENHEIM PIPPIN.**—Fruit large, roundish, of a yellowish colour, tinged with red next the sun ; pulp sweet and high flavoured ; ripe in November, and keeps till March.

37. **GRAVEINSTEIN.**—Fruit rather large and compressed ; of a yellowish green colour, striped with red, and high flavoured ; ripens in October, and lasts till January.

38. **ALEXANDER.**—Fruit very large, somewhat cordate, smallest

at the crown ; of a greenish yellow colour, striped or marbled with red ; pulp tender, sweet, rich and aromatic ; ripens in October, and lasts till February. Though a large, hardy tree, it is a medium bearer, but a magnificent fruit.

39. **FRANKLIN GOLDEN PIPPIN.**—Fruit a medium size, conical, of a golden yellow colour, with gray and dark coloured specks ; it ripens in November, and continues till March ; flesh firm, and highly aromatic ; tree rather slender, and middling bearer, but an excellent fruit.

40. **RAMBOUR FRANÇ.**—Fruit large and compressed ; of pale yellow colour, tinged with red ; flesh tender, with a slight acidity ; ripens in October and November.

41. **NEWARK KING.**—Fruit large, oval shape ; colour red, striped with yellow ; the pulp of pleasant flavour ; ripens in October, and lasts till January.

42. **PRIESTLY.**—Fruit large, oblong ; of a dull red colour, faintly striped ; the flesh of pleasant and aromatic flavour ; ripens in December, and continues till April.

43. **HUGHES' GOLDEN PIPPIN.**—Fruit small, round, but partially depressed ; of yellow colour, with numerous specks ; flesh firm, juicy, rich, pungent and agreeable ; ripens in October, and lasts till January.

44. **BEAUTY OF KENT.**—Fruit rather large, and of irregular shape ; of a yellowish green colour, mottled with red ; flesh firm and juicy, with a pleasant acid flavour ; ripens in October, and continues till January.

45. **MONSTROUS PIPPIN.**—Fruit of enormous size, often weighing twenty-five ounces or more ; of a pale lemon colour ; flesh tender, and of sprightly flavour, excellent for cooking ; ripens in October, and continues fit for use till January.

46. **LONG ISLAND RUSSET.**—Fruit of medium size, depressed ; russetty colour, and of pleasant flavour ; ripens by November, and continues till March.

47. **WINTER SWEET PEARMAIN.**—Fruit small, roundish ; of a dull red colour, with green stripes ; pulp very sweet, and of peculiar flavour ; ripens in November, and keeps till March.

48. **LADY APPLE, or Pomme D'apis.**—Fruit small, flat ; of pale yellow colour, tinged with a deep red on the side ; flesh crisp, sprightly and pleasant ; ripens in November, and continues till April.

49. **POMME GRISE.**—Fruit rather large, somewhat depressed ; russetty ; of pleasant flavour ; ripens in November, and lasts till March.

50. **NORFOLK BEAUFIN.**—Fruit middling size, flattish, and a deep red and pale green colour ; it ripens in November and December, and lasts till August ; flesh firm and savoury ; tree hardy and upright, and a good bearer ; fruit excellent for use in the kitchen.

51. **EARLY CROFTON, or Irish Peach Apple.**—An Irish apple, of the middle size and flattish shape ; of an olive green colour, much variegated with red ; has a rich saccharine flavour ; ripens in August ; it is much esteemed for the dessert, and excellent

also as a sauce apple. The tree grows well and is not apt to canker.

52. **DOWELL'S PIPPIN.**—In size and form this apple resembles the Ribstone Pippin, but is more pointed at the head, and the eye is sunk in a more confined and deeper cavity; the skin is green, nearly covered with a clear thin russet, and a slight tinge of brownish red on the sunny side; an excellent dessert apple from October to Christmas.

53. **BARCELONA PEARMAIN**, *Glace Rouge*, *Kleiner Casseler Reinette*, *Reinette Rouge*, *Reinette Rousse*, *Reinette des Carmes*.—Fruit of medium size, oval, not angular; colour, brownish yellow in the shade, but deep red next the sun; flesh firm, yellowish, with a rich aromatic but slightly agreeable acid. A dessert apple from November till February. Tree a good bearer.

54. **BELL FLOWER.**—A very large and beautiful apple, its colour bright yellow, with an occasional blush on the sunny side; its form oblong; the flesh tender, juicy, rich, and finely flavoured, and is alike excellent for the dessert or for cooking. It ripens early in November and will keep all the winter.

55. **COURT PENDU**, *Capendu*, *Court Pendu Plat*, *Garnon's Apple*.—An estimable dessert apple of nonpareil size [small]; very flat in shape, the colour yellow, a good deal covered with full red; it is of high saccharine flavour and of close consistence; the fruit keeps till February or March. The tree grows upright and bears well.

56. **MALCARLE**, *Charles Apple*, *Mela Carla*.—A far famed fruit. In the climate of Italy this is supposed to be the best apple in the world. It is cultivated extensively in the territories of Genoa, as an article of export and commerce to Nice, Barcelona, Cadiz, and Marseilles. The fruit is rather large, its form inclining to globular: Its beautiful waxen skin is a little marbled with a very faint green near the eye; its colour in the shade is a pale yellow tinged with flaming crimson next the sun; the flesh is white, tender, delicate, sweet, with the fragrant perfume of roses. It ripens in September and will keep till spring.

57. **STROAT**, *Straat*.—Is an autumn fruit, it is stated to be tender, juicy, well flavoured, and according to Mr. Buel, in excellence it is not surpassed by any fruit in its season; a native.

58. **SWAAR APPLE.**—It is a highly celebrated winter table fruit in some parts of New York, and New Jersey; it is a large green apple of great and uncommon flavour and richness; highly deserving cultivation in every collection of fine fruits.

59. **GOLDEN HARVEY**, *Brandy Apple*.—A dessert apple not larger than the Golden Pippin; colour light yellow, with a flush of red and embroidered with a roughish russet. It is called Brandy Apple from the superior specific strength of its juice; is of remarkably close texture, very rich in flavour, and will keep till April or May.

60. **SIBERIAN HARVEY.**—This fruit, which was raised by Mr. Knight from the Siberian Crab and Golden Harvey, is stated to be a small globular fruit, of a bright gold colour, stained with deep

red on the side next the sun; the fruit growing in clusters on slender branches; the juice exceeding sweet; ripe in October. Specific gravity of its juice, 1,091.

APRICOTS.

1. **RED MASCULINE**, *Abricot Precocé*, *Abricot Hatif Musque*, *Early Masculine*.—This is an old variety, the fruit of which is small, of a roundish form, and greenish red colour; the pulp is tender; the tree a good bearer, and the fruit esteemed for its earliness and tart taste; ripens in July.

2. **HEMSKIRKE**.—Fruit middle sized, roundish, slightly compressed; of a bright yellow colour; flesh tender, juicy, with a particularly rich, delicate flavour, resembling that of the Green Gage Plum; ripe in July.

3. **MUSCH-MUSCH**.—Fruit round, of a deep yellow colour; remarkable for the transparency of its pulp, through which the stone is visible; the flesh is very fine and agreeable; ripens in July.

4. **EARLY ORANGE**, *Royal George*, *Royal Orange*.—The fruit of a medium size, of a deep yellow colour, spotted with red or dark purple next the sun; flesh deep orange, succulent and well flavoured; not perfectly a freestone; ripens early in August.

5. **BREDA**, *Abricot de Hollande*, *Amande Aveline*, *Royal Persian*.—Fruit medium size, of a round form, and deep yellow colour; the pulp is soft and juicy; the tree a great bearer, and the fruit, which ripens early in August, is in great esteem.

6. **BRUSSELS**.—Highly esteemed for its productiveness: fruit medium size, inclining to an oval form; of a red colour next the sun, covered with numerous dark spots; the flesh is of a greenish yellow colour, of a brisk flavour, and not liable to become mealy; ripens in August.

7. **MOORPARK**, *Hanson's*, *Temple's*, *Dunmore's Breda*.—The tree is of vigorous growth, and extraordinarily productive; the fruit is very large, of a bright gold colour, or orange, with dark spots next the sun; flesh orange colour, melting and excellent; ripens early in September.

8. **PURPLE**, *Alexandrian Apricot*, *Abricot Angoumois*, *Abricot Violet*, *Black Apricot*.—A small, globular, downy fruit, a little oblong; of a pale red colour, becoming deep red or purple next the sun; flesh pale red, but orange next the stone; a little acid, but good; ripens in August.

9. **TURKEY**, *Large Turkey*.—A superior apricot; fruit of a medium size, deep yellow colour, with red blotches next the sun; form globular; flesh firm, juicy, rich and excellent; ripe by the end of July.

10. **PEACH APRICOT**, *Abricot Pêche*, *Abricot de Nancy*, *Imperial Ansons*.—This is a first rate fruit; form variable, generally flattened; skin slightly downy; fawn colour next the sun, tinged with reddish spots or points; pulp yellow, melting, juice abundant, high flavoured and excellent; ripens early in August.

11. **BLOTCHED LEAVED ROMAN**, *Blotched Leaved Turkey*, *Vari-gated Turkey*, *Abricot Macule*.—Tree vigorous and productive; fruit large size and round form; of a deep yellow colour, but the pulp not very juicy; ripens early in August.

12. **ROYAL**, *Abricot Royale*.—This fruit is next in size to the Moorpark, rather oval, compressed; of dull yellow colour, slightly red; flesh pale orange, firm, juicy, sweet, and high flavoured, with a slight acid: ripens early in August.

CHERRIES.

The first 14 varieties are round fruit, the last 16 heart shaped.

1. **EARLY MAY**, *Small Early May*.—This variety is well calculated to be trained in espalier form, being naturally dwarfish. The fruit, which is of small size, is ripe before any other; its taste acid but pleasant, and the skin of a red colour.

2. **MAY DUKE**.—Fruit medium size, round, and a red colour; it ripens in the beginning of June, and the flesh is a soft and an agreeable acid; the tree a good bearer, and the fruit excellent.

3. **LATE DUKE**, *June Duke*.—A cherry of large size; flesh very rich; it ripens in July and lasts long on the tree, improving in its flavour. The tree is of vigorous growth and an abundant bearer.

4. **AMBREE**, *Cerise Ambree*.—A large cherry with a round head, flattened at the opposite end; marbled with red and yellow in the shade, bright red next the sun; flesh white, somewhat transparent, very juicy, sweet, and excellent, ripe in June and July.

5. **ARCH DUKE**, *Griotte de Portugal*, *Portugal Duke*.—A large globular red cherry; like the May Duke, it grows in clusters, but the tree grows more vigorous than that variety; an excellent cherry, and a great bearer; ripe in July.

6. **BELLE DE CHOISY**, *Cerise de la Palembree*, *Cerise Doucette*.—A middle sized, roundish fruit, growing in pairs on a forked stalk; skin transparent, red, mottled with amber; flesh amber coloured, tender and sweet.

7. **CARNATION**, *Late Spanish*, *Wax Carnation*.—This fruit, which derives its title from its colour, is of a large size; the skin is a yellowish white, beautifully mottled with red; the flesh yellow, rather firm, and of a pleasant taste, but less sweet than many other varieties; the juice is sprightly, and of a pale colour. This cherry ripens in July, and is held in high esteem for preserves.

8. **HOLMAN'S DUKE**.—The branches of this tree are more spreading than the May Duke; the fruit is larger, of equally fine flavour, and ripens about two or three weeks later.

9. **PRINCE'S DUKE**.—This cherry was raised in the Flushing Nursery, from the seed of a Carnation cherry. The fruit is of a red colour, shaped like that of its parent, and much compressed; very rich and luscious when at perfect maturity, which is in July.

10. **KENTISH**, *Cerisier de Montmorency*, *Long Stem Montmorency*.—Fruit of a bright red colour; ripens in July, and has an agreeable acid flavour; tree a great bearer, and fruit much esteemed when full ripe; the skin is then of a dark red colour.

11. **SHORT STEM MONTMORENCY**, *Montmorency a gros fruit*, *Gros Gobet*, *Gobet a Courte Queue*, *Cerise de Vilaine*, *Cerisier Coulard*.—This tree produces abundance of flowers, but the French complain that the fruit does not set well; it is therefore found only in the gardens of those who prefer the fine quality to the quantity of fruit. The cherry is large, flattened at both ends; the skin is of a brilliant red, and not very dark; the flesh is yellowish white, slightly acid, and highly pleasant. This fruit is considered by some as one of the best cultivated; it ripens in July.

12. **MORELLO**, *Milan*, *Cerise du Nord*, *English Morello*.—The fruit medium sized, round; nearly black when at maturity; tree a great bearer; the fruit will keep late, and is excellent for preserving and for brandy.

13. **PLUMSTONE MORELLO**.—A tree of moderate size, of the Duke or Kentish species; a very large, dark, round cherry, nearly black; of a rich acid flavour. The stone is very large, and resembles that of a plum; a native of Virginia, introduced by Wm. Prince, Esq., of the Linnæan Botanic Garden, Flushing.

14. **WATERLOO**.—A large, round, dark red fruit, inclining to black at maturity; the flesh is firm, and of an excellent flavour; raised by a daughter of Mr. Knight, and so named from its perfecting its fruit soon after the battle of Waterloo. The tree is of strong but irregular growth.

15. **GASCOIGN'S BLEEDING HEART**.—Fruit large, oblong, or heart shaped, of a dark red colour; its flesh pretty firm, of a pleasant and fine flavour; ripe in June.

16. **BIGARREAU**, *Graffion*, *Turkey Bigarreau*, *White Ox Heart*.—Very large, obtuse, heart shaped, yellowish amber colour, but fine red next the sun; flesh firm, white, sweet and well flavoured; a beautiful and excellent fruit, not very productive; ripe in June and July.

17. **BLACK EAGLE**.—A cherry of globular form, and middle size; dark purple, or nearly black; flesh very tender, rich, and of excellent flavour, and ripens early. The tree grows strong and very upright.

18. **BLACK HEART**, *Guignier a Fruit Noir*.—Fruit rather large, heart shaped; dark purple, approaching to black at maturity; flesh dark red, tender, of excellent flavour; ripe early in July; tree a good bearer.

19. **BLACK TARTARIAN**, *Black Circassian*, *Fraser's Black Tartarian Black Russian*, *Ronald's Large Black Heart*, *Fraser's Black Heart*. A very large, heart shaped fruit, of a most superior quality; colour dark shining purple, or black; flesh firm, dark red or purple, sweet, and of most excellent flavour. The tree and fruit combine an assemblage of good qualities; an elegant, very rapid growing tree, of great productiveness; very large and beautiful fruit, and excellent quality, ripening in June and July.

20. **WHITE TARTARIAN**, *White Transparent Crimea*, *Fraser's White*.—A beautiful cherry, pale yellow, approaching to an amber next the sun; a much admired fruit, of excellent flavour; a good bearer, ripening early in July. This tree grows vigorous and up-

right ; it is thus readily distinguished from another variety, bearing the same title.

21. **BLACK CARONE**, *Couronne, Coroun*.—This is a large and improved variety of the Black Mazzard, which it resembles in form, colour and general properties ; the fruit ripens in July ; the tree yields plentiful crops.

22. **HEREFORDSHIRE BLACK**, *Late Black Heart*.—Large, black, and heart shaped ; a most excellent cherry, and a great bearer ; and more valuable for ripening late, when most varieties are gone.

23. **ELKHORN**, *Black Ox Heart*.—A large cherry, ripening between the Black Heart and the latest varieties ; its flesh remarkably hard, and very peculiar ; and though not high flavoured, it is supposed by some, that from its solid consistence, it may be profitably cultivated, to be transported from a distance to market.

24. **ELTON**.—The tree is very vigorous and productive ; the fruit is pretty large, heart shaped ; pale glossy yellow in the shade, but marbled with bright red next the sun ; flesh firm, sweet and rich ; ripens early in July.

25. **FLORENCE**.—Large, heart shaped, depressed ; of a yellow amber colour, marbled with bright red in the shade ; bright red next the sun ; tolerably firm, juicy, rich and sweet ; ripe end of June.

26. **HARRISON'S HEART**, *Red Ox Heart*.—A large heart shaped cherry, yellowish or amber colour, but light red next the sun ; flesh tender and high flavoured ; ripens early in July.

27. **KNIGHT'S EARLY BLACK**.—Blossoms early ; fruit resembles the Waterloo ; of a rich dark hue ; its flesh is firm and juicy ; it is abundantly sweet, and ripens by the middle of June.

28. **REMINGTON WHITE HEART**.—A moderate sized cherry, of moderate flavour ; chiefly valuable for its very late maturity ; said to have originated in Rhode Island.

29. **WHITE HEART**.—This cherry ripens immediately after the May Duke ; the fruit is of medium size, oblong and heart shaped ; the skin is of a fine appearance, being a yellowish white on the one side, and tinged with pale red next the sun ; the flesh is rather firm, of pleasant flavour, accompanied by a honied sweetness ; but the tree bears very indifferently.

30. **DWNTON**.—A new variety, raised by Mr. Knight. Fruit rather round, inclining to heart shape ; of a pale yellow colour, sprinkled with minute red spots, and large patches of dull red or maroon ; flesh pale amber colour, tender and juicy, very sweet and high flavoured ; ripens early in July.

NECTARINES.

The first thirteen varieties are freestones, the last seven are paves or clingstones.

1. **FAIRCHILD'S EARLY**.—Fruit very early, but small ; of globular shape ; yellow in the shade, deep scarlet next the sun ; flesh yellow, not juicy, but well flavoured ; ripens early in August.

2. MILLER'S ELRUGE.—One of the very best and most high flavoured nectarines; fruit medium size, of a dark red and pale yellow colour; pulp melting, very juicy, rich and high flavoured; ripens middle of August.

3. EARLY VIOLET, *Violette Hative*, *Petite Violette Hative*, *Violet*, *Lord Selsey's Elruge*, *Large Scarlet*.—Fruit variable in size, generally medium; pale yellowish green, but darkish purple red next the sun; flesh melting, juicy, rich and excellent; ripe in August.

4. PITMASTON'S ORANGE.—A good sized globular or heart shaped fruit, of a rich yellow colour, but dark crimson or purple next the sun; flesh golden yellow, but red next the stone from which it separates; it is melting, juicy, saccharine and high flavoured; ripe middle and end of August.

5. VERMASH, *True Vermash*.—This fruit is of rather small size, and of round form, tapering towards the eye; the skin is a very deep red colour next the sun, and of greenish hue on the other side; pulp rich, melting and juicy. The fruit is at maturity in August.

6. AROMATIC.—A middle sized, rather globular fruit, deep red or brown next the sun; flesh pale straw, but red at the stone; juice of a rich vinous flavour; ripe by the end of August.

7. WHITE NECTARINE, *Old White*, *Brugnon Blanc Musquee*, *Nectarine Blanche de Weitzenfeld*.—Fruit middle sized, roundish; colour very pale yellowish green, becoming almost white in the shade, and slightly tinged with red next the sun; flesh tender and juicy, with a fine vinous flavour; ripens early in September.

8. COMMON ELRUGE.—Fruit large, roundish, inclining to oval; skin deep violet or blood colour when exposed, with minute brownish specks, paler in the shade; flesh whitish, melting, very juicy, rich and high flavoured; a much esteemed fruit, ripening early.

9. SCARLET.—Fruit medium size, of a beautiful scarlet colour next the sun, and pale red on the shaded side; the flesh separates from the stone, and is at maturity in August.

10. TEMPLES.—A fruit below medium size, rather oblong; pale red next the sun; flesh white; it shrivels when ripe; very juicy, rich, and of fine flavour, and is at maturity in September.

11. PETERBOROUGH, *Late Green*.—The fruit is of medium size, round form, and always of a green colour; the part next the sun being of the deepest green, and the other side of a paler hue; the flesh is firm and of pleasant flavour; and the fruit lasts till October.

12. MURRY.—Fruit medium size, dingy red and pale green colour, and has a rich juicy flavour. A much esteemed fruit.

13. WHITE OR FLANDERS NECTARINE, *New White*, *Emmerson's New White*.—A middle sized, roundish, very pale fruit, slightly tinged with red next the sun; flesh tender and juicy, with a fine vinous flavour. The Pomological Magazine describes this as a clingstone; Lindley as a freestone.

14. EARLY NEWINGTON, *Lucombe's Seedling*.—Fruit large, ripens in August, and is of a deep red colour; pulp super excellent; considered by some as the best of all nectarines.

15. ITALIAN, *Brugnon or Italian*.—A large globular pale yellow fruit, marbled with dark red next the sun; flesh firm, yellow, red at the stone, juicy, rich and excellent; ripe in August.

16. BRUGNON VIOLET MUSQUE, *Brugnon Musque*.—Fruit large, of a deep red and yellow colour; skin very smooth; flesh yellow, but red at the stone; saccharine, vinous, musky; at maturity in September.

17. GOLDEN.—Fruit medium size, of the finest orange colour, delicately and beautifully mottled with red next the sun, which gives to it a clear waxen appearance; flesh firm, yellow, pale red at the stone, and has a poignant, rich flavour; ripens in September.

18. RED ROMAN, *Roman Red*.—A very excellent nectarine, of large size; the skin dark red next to the sun, and of a yellowish hue on the other side; flesh yellowish, but red next the stone; it abounds with rich juice when fully ripe, which is about the middle of September.

19. SCARLET NEWINGTON, *Late Newington, Old Newington*.—This variety is much esteemed; the fruit large, of a beautiful red colour next the sun, and a fine yellow on the other side; its quality is excellent, being rich and juicy; ripe by the middle of September.

20. TAWNY NEWINGTON.—Fruit largish, somewhat ovate; tawny coloured, marbled with dull red or orange next the sun; flesh pale yellow, but red at the stone; very juicy, sugary, and of the most delicious flavour; ripens in September.

PEACHES.

The first thirty-eight varieties are freestones, the last twelve, paves or clingstones.

1. WHITE NUTMEG, *Avant Peche Blanche*.—Fruit small, round, and of white colour; juice sugary and musky; esteemed for being the first sort ripe.—July.

2. RED NUTMEG, *Brown Nutmeg, Avant Peche Rouge*.—The growth of this tree is exceedingly slow, its habits dwarfish. The fruit, which is at maturity by the middle of July, is of yellow and red colour; the pulp is rich and musky, and esteemed for its precocity.

3. GREEN NUTMEG, *Early Anne*.—This variety is said to have originated in Berkshire, England. The fruit is of round form; colour yellowish green, tinged with red; pulp melting, juicy, and of very pleasant flavour; the tree is a good bearer, and the fruit ripens early in August. Murray's Early Anne is a variety raised from the seed of this.

4. NEILS' EARLY PURPLE, *Early Purple of Miller, Johnson's Purple Avant, Padley's Early Purple, Veritable Pourpree Hative, Peche du Vin*.—One of the most beautiful of peaches; of largish size, and of a fine deep red and purplish colour; it ripens in the middle of August; flesh melting, juicy, with a rich vinous flavour; an excellent fruit.

5. **MONTAUBON.**—Fruit round, of medium size ; colour dark red, approaching to purple next the sun, but of yellowish green on the other side ; flesh tender, melting, rich, juicy, and of pleasant flavour ; ripens in August.

6. **SWEET WATER, *Early Sweet Water.***—This variety is said to have originated at Flushing ; its form is round, and its colour whitish green at maturity, which is early in August ; the flesh is very tender, melting, rich and juicy.

7. **BREVOORT'S SEEDLING.**—A superior freestone peach, raised by Henry Brevoort, Esq., of New-York ; pulp tender, juicy, and of excellent flavour ; ripens in August.

8. **PETITE MIGNONNE, *Double de Troyes, Peche de Troyes, Mignonne.***—The tree is of feeble growth, but productive ; skin downy, fine, pale yellow, but red next the sun ; flesh melting, juice abundant and of fine flavour ; ripens in August.

9. **EMPEROR OF RUSSIA, *Serrated Leaf, or Unique.***—The tree is of medium vigour, but the young wood is said to be subject to mildew ; the fruit, which ripens early in August, is deeply cleft, one half of it projecting considerably beyond the other ; the flavour of the flesh is very good. This sort originated in New-Jersey twenty years ago, and all the stones of this fruit are said to produce plants with jagged leaves.

10. **WASHINGTON PEACH.**—A first rate peach : colour a pale yellow in the shade, but dark red next the sun ; flesh very juicy and delicious ; ripens towards the end of August.

11. **MADELEINE DE COURSON, *Madeleine Rouge, Rouge Paysanne, Red Magdalen of Miller.***—An excellent fruit, of large size, and fine red colour ; ripens at the end of August ; flesh firm, white, very red at the stone ; sugary and very rich.

12. **DOUBLE MONTAGNE.**—A beautiful and excellent peach, of middle size ; skin greenish white, but soft red, marbled with a deeper red next the sun ; flesh melting ; juice plentiful, and highly flavoured ; ripe in August.

13. **SPRING GROVE.**—A medium sized fruit, of a globular form ; greenish yellow, but bright crimson next the sun ; pulp juicy, rich and high flavoured ; ripens in August.

14. **WHITE MAGDALEN.**—Fruit rather large and round, slightly striped with red, and of a yellowish white colour ; it ripens in August ; flesh white, fine, melting, and pretty high flavoured.

15. **BELLE CHEVREUSE.**—Fruit medium size, oblong form, and of a red and yellow colour ; ripens in the end of August ; the pulp is rich, juicy and sugary ; tree a good bearer, and the fruit highly esteemed.

16. **MALTA, *Peche Malte, Belle de Paris, Malte de Normandie.***—Fruit above the medium size ; pale yellowish green, marbled with purplish red ; flesh yellowish, juicy, rich, vinous and of superior flavour ; ripens at the end of August.

17. **ACTON SCOT.**—Fruit below the medium size ; colour pale yellow, but bright red and marbled next the sun ; flesh melting, juicy, and pretty good.

18. **ROYAL KENSINGTON.**—Fruit of a high red and yellow co-

lour; flesh rich and juicy when at maturity, which is early in September; a first rate peach.

19. NOBLESSE.—The tree is of vigorous growth, and very productive; fruit large, and of a pale red colour; pulp juicy, rich and melting when at maturity, which is early in September.

20. VAN ZANDT'S SUPERB, *Waxen Rareripe*.—This variety originated with Mr. Van Zandt, of Flushing; its skin is smooth, somewhat mottled, and of a beautiful waxen appearance; flesh melting, and of excellent flavour.

21. GROSSE MIGNONNE, *Veloutée de Merlet, Grimwood's Royal George, Large French Mignonne, Vineuse*.—One of the most beautiful and delicious varieties in cultivation. The fruit is large, of a beautiful red or rose colour, and greenish yellow; pulp tender, juicy and high flavoured when in perfection, which is early in September.

22. BELLECARDE, *Galande, Violette Hative, Noire de Montreuil*.—The tree is vigorous and productive; fruit medium size, much coloured, and almost black; flesh firm, saccharine and juicy; a first rate fruit.

23. GEORGE THE FOURTH.—An excellent peach, of medium size and globular shape; of pale yellow colour in the shade, and dark red next the sun; flesh pale yellow, but red at the stone from which it separates; a fruit of very superior flavour when at maturity, which is early in September; it originated in the garden of Mr. Gill, Broad street, New-York.

24. DOUBLE SWALSH.—Fruit middle sized, ovate; skin pale yellow, but bright deep red next the sun; flesh soft, melting and juicy; an excellent peach; ripe early in September.

25. BELLE DE VITRY.—A large fruit, of fine red colour next the sun, on the opposite side a yellowish white; form globular; flesh white, stained with red at the stone; melting, juicy, sweet, vinous and excellent; ripe in September.

26. BOURDINE, *Bourdin Narbonne*.—The fruit is large, round, sometimes a point at its summit; deep red next the sun; flesh melting, sweet and vinous; in perfection by the middle of September; a first rate peach.

27. RAMBOUILLET, *Rambullion*.—This fruit is of rather large size and oval form, with a deep sature; it is of a fine red next the sun, and yellowish on the shaded side; flesh bright yellow, melting, with rich and vinous juice; it ripens in September.

28. SMOOTH LEAVED ROYAL GEORGE.—This is considered by Lindley as a superior variety: fruit above the middle size, globular, depressed; skin yellowish white, but of a beautiful red or carmine colour next the sun; flesh melting; juice plentiful, and of a high vinous flavour; ripening in September.

29. ROSANNA, *Alberge Jaune, Pêche Jaune Rousanne, St. Laurent Jaune, Yellow Alberge, Petite Rousanne*.—A middle sized, globular fruit, of a yellow colour, but next the sun deep red at maturity; a deep sature extends from summit to base; flesh melting, juicy, rich, sweet, vinous and excellent; at perfection in September.

30. ROYAL GEORGE MIGNONNE.—A superior fruit, of globular

form; its colour yellow and deep red; flesh melting, juicy, saccharine, vinous, and most excellent; ripe in September.

31. **WHITE BLOSSOM**, *Willow Peach*, *White Blossomed Incomparable*.—This variety originated on Long Island; the fruit is perfectly white, of an oval form and handsome appearance; the flesh is also white, melting, juicy and pleasant; it is much used for preserves when not over ripe, and is at full maturity in September.

32. **RED CHEEK MALACATUNE**, *Yellow Malagaton*, *Alberge Incomparable*.—This variety originated at the Flushing nursery; the fruit is of large size and oval form; its colour is yellow, with a red cheek on the sunny side; the flesh is also yellow, melting, rich, juicy and luscious. There is another variety of this fruit, which originated with Mr. Polls, of New-York, said to be very productive, and of excellent quality; ripens in September.

33. **NEIVETTE**, *Velontee Tardive*.—Fruit large, a little oblong, downy, green in the shade, and deep red next the sun; flesh firm, saccharine and high flavoured; ripens towards the end of September.

34. **LATE ADMIRABLE**, *Royale*, *Royal*, *Bourdine*.—Fruit large, roundish, inclining to oblong; sature deeply impressed along one side, having the flesh swelling boldly and equally on both sides, with a slight impression on the summit; skin downy, of pale green colour, streaked with dull tawny red; flesh white, delicate, melting, juicy and high flavoured; a "magnificent peach," ripening in September. Mr. Prince has the *Teton de Venus* under this head, as a synonym; but it is generally considered as a distinct variety. Mr. Kenrick says, that there are two or three varieties named *Teton de Venus*.

35. **PRESIDENT**.—This variety originated at Bedford, on Long Island. It is a rich, melting, juicy fruit, ripening in September; it is of large size, roundish, with a shallow sature; skin very downy, dull red next the sun, pale yellowish green in the shade; a first rate peach.

36. **HOFFMAN'S POUND**.—This fruit is by some called the *Morrissania*, from its having been first obtained by Mr. Floy, from Gouverneur Morris; but it originated with Martin Hoffman, Esq., of New-York. The fruit is very large, weighing from twelve to fourteen ounces; very juicy and delicious, parting from the stone; greatly esteemed from its ripening late, about the middle of October.

37. **MONSTROUS LEMON**, *Largest Lemon*.—This variety was first discovered in the garden of Mr. Tiebout, of York Island; the fruit is of the largest size, and in the gardens of two persons in New-York, has weighed seventeen ounces, as stated by Mr. Prince. He says the tree does not bear well unless the situation is a sheltered one; the fruit is late in ripening.

38. **HEATH**, *Kenrick's Heath*.—This variety was first obtained from the late Gen. Heath, of Roxbury, near Boston. The fruit is very large, oblong and beautiful; frequently weighing half a pound; colour pale yellowish green, with crimson or violet next the

sun; its flesh is melting, juicy, rich, vinous, agreeably acid, and good; ripens in October.

39. **HEATH, *Heath Clingstone*.**—Mr. Prince says, that the original tree of this variety was discovered growing wild on the farm of the late Judge Willet, of Flushing, and took its name from its being found in a barren field. The fruit is very large, of oval or oblong form; the skin is white; the flesh is peculiarly rich and highly flavoured, tender, melting and juicy. There is another variety mentioned by Mr. Kenrick, and called by the same name, stated by Mr. Coxe to have been raised from a stone brought by Mr. Heath from the Mediterranean.

40. **CATHARINE.**—Fruit large, round, variable; colour a beautiful red next the sun, marbled and dashed with darker shades; pale yellow in the shade; flesh very white, tinged with yellow; juice abundant, and of very rich and sweet flavour; tree a good bearer.

41. **PAVIE ADMIRABLE, *Incomparable*.**—Fruit large, roundish; skin pale yellow, shaded with scarlet or deep crimson next the sun; flesh pale yellow, juice sugary and well flavoured.

42. **LEMON CLINGSTONE, *Pine Apple, or Kennedy's Lemon*.**—The fruit is rather large, oblong; colour, in the shade, deep yellow, but of a dark-red next the sun; the flesh is yellow, rich, vinous, a little acid.

43. **PRINCE'S BLOOD CLINGSTONE, *Blood Clingstone, Claret Clingstone*.**—The fruit is oval, and of a large size; the skin is of a dark purplish colour, and very downy; the flesh of a crimson or purplish tint; suited for preserves and pickles.

44. **MONSTROUS PAVIE OF POMPOONE, *Gros Melecoton, Gros Persique Rouge*.**—Fruit very large and round, downy, of a fine red and greenish white colour; flesh white, deep red at the stone, juicy and vinous; excellent for preserving; tree a good bearer.

45. **OLD NEWINGTON.**—This fruit is large and globular, of a fine bright red and pale yellow colour; flesh yellowish white, very juicy, rich, sweet and well flavoured; very productive.

46. **DIANA.**—A large, oblong peach; colour white in the shade, but red next the sun; flesh very juicy and delicious.

47. **PAVIE MAGDELEINE, *Pavie Blanc, Melecoton, Myrecoton, Persique a Gros Fruit Blanc*.**—The fruit is large and downy; white in the shade, and red next the sun; flesh white, fine, melting, and of an agreeable musky flavour.

48. **HOYTE'S LEMON CLINGSTONE.**—This fruit is of the largest size; of a clear golden yellow in the shade, but bright red next the sun; its form resembles a lemon, and some have weighed twelve ounces; its flesh is firm, and is at maturity in New-York by the end of September.

49. **YELLOW ALBERGE CLINGSTONE, *Persais d'Angoumois, Pavie Jaun, Persecque Jaune*.**—Fruit of fine size and beautiful form; the skin is velvety yellow where shaded, and speckled with reddish points; the flesh is firm, rather dry, and almost breaking; its colour is yellow. It is deemed an excellent fruit.

50. **EARLY NEWINGTON, *Smith's Newington, New-York Early Newington*.**—This should have been placed first on our list of cling-

stones, as being the earliest. A much esteemed fruit; its colour in the shade is white, but next the sun red; its form is globular; its flesh is juicy, rich and high flavoured. The tree is productive, and the fruit matures in August and September.

PEARS.

The first 18 are Summer, the next 24 Autumn, and the last 18 Winter Pears.

1. MUSK ROBINE, *Poire à la Reine, La Princesse, Queen's Pear, Muscat Robert, Poire d'Ambre*.—Fruit small, and of yellow colour; it ripens in July, and continues to the end of August; of a rich musky flavour, a great bearer and much esteemed dessert fruit.

2. LONDON SUGAR.—This fruit is below medium size; colour greenish yellow, tinged with brown; form turbinate narrowed at the crown; flesh tender, melting saccharine, of a rich musky flavour; an excellent early fruit, and very productive. Ripe in July.

3. MADELEINE, *Magdalene, Citron des Carmes, Early Chaumontelle*.—This pear is of medium size, pale yellow, with an occasional blush next the sun; flesh white, melting, perfumed. A fine old fruit, ripe at the end of July.

4. PREMATURE.—A new pear, about the size of the Crawford, but more juicy and delicious, and remarkably early; it commands a good price in the markets of Edinburgh, Scotland, and is reputed a most superior early fruit.

5. JARGONELLE, *Epargne, Beau Present, Saint Samson, Grosse Cuisse Madame, Saint Lambert, Poire des Tables des Princes*.—Fruit rather large, oblong, of a pale green colour; flesh melting, juicy, with a slightly acid, rich and agreeable flavour. It ripens early in August, is one of the most productive of all pears, and the very best in its season.

6. CUISSE MADAME, *Epine d'Ete, Fondante Musque, Satin Vert, Satin Green*.—Fruit of smallish size; greenish yellow at maturity; pyramidal; flesh melting, juicy, musky, rich, and excellent. Ripe by the middle of August.

7. GREEN CHISSEL.—Fruit nearly globular; skin green, but slightly brown next the sun; flesh gritty, saccharine, a little perfumed; the fruit grows in clusters, and ripens early in August. The tree is of feeble growth, but very productive.

8. AUGUST MUSCAT, *Aurite, Muscat d'Aout, Musk, or Spice*.—Fruit of medium size; turbinate, flattened; colour yellow, but light red next the sun; flesh breaking, saccharine and perfumed. It succeeds tolerably on the quince, and ripens early in August.

9. CASSOLETT, *Friole, Lechevriou, Muscat Verd, Poire de Sillerie, Verdasse, Green Muscat*.—A small pyriform fruit, of a bright green colour, slightly red next the sun; flesh breaking, of a sweet and musky flavour; ripens in August.

10. SABINE D'ETE.—This pear is of pyramidal form, terminating in a round blunt point at the stalk; colour yellow; but

fine scarlet next the sun ; the whole surface smooth, regular, and polished ; flesh white, melting, juicy, and highly perfumed, the tree is an abundant bearer, and ripens its fruit in August.

11. **SEIGNEUR D'ETE**.—Fruit above the middle size ; a blunt oval ; colour fine orange, but bright scarlet next the sun, and marbled ; flesh melting, free from grit ; a rich and beautiful pear. The tree is handsome and bears well ; its fruit ripens early in September.

12. **ROUSSELET DE RHEIMS**, *Petit Rousselet*.—Fruit small, pyramidal, greenish yellow at maturity, but brown red next the sun, with russety spots ; flesh half *beurre*, fine, very perfumed. Good to put in brandy and to dry. Ripens end of August.

13. **WILLIAMS' BONCHRETIEN**, *Bartlet*.—This fruit originated with a Mr. Wheeler in Berkshire, England, but was subsequently extensively propagated by Mr. Williams near London—hence its name. The fruit is large, oblong ; the stalk thick and fleshy, an inch long ; the colour at maturity, yellow tinged with red ; flesh whitish, very melting, and delicate ; juice perfumed, sweet and abundant. Tree very productive, and fruit ripe at the end of August.

14. **WINDSOR**, *Cuisse Madame*, of the French.—A middle sized oblong pear ; colour green, but brownish red next the sun ; half melting, sweet, a little musky, rather coarse ; ripe by the end of August.

15. **SUMMER BONCHRETIEN**, *Bonchretien d'Ete*, *Gracioli*, of the French.—Fruit very large, irregular, knobby ; skin smooth, of pale yellow colour, but slightly red next the sun ; flesh whitish yellow, firm and breaking ; juice sweet and very agreeable. It ripens early in September.

16. **SUMMER BERGAMOT**, *Hamden's Bergamot*, *Milan Blanc*, *Bergamot d'Ete*, *Milan de la Beuvriere*.—Fruit of medium size, globular, depressed ; colour greenish yellow, russeted and speckled next the sun ; flesh melting, juicy, saccharine and high flavoured. At maturity by the middle of September.

17. **DEARBORN'S SEEDLING**.—This new variety originated in the garden of the Hon. H. A. S. Dearborn of Roxbury. The tree is of vigorous growth ; fruit of medium size, rounded at the crown, and regularly diminishes in a parabolic manner to the stalk ; the skin is smooth, thin green with russet spots ; at maturity it turns to a delicate yellow ; flesh very melting, and of the finest flavour.

18. **JULIENNE**, OF COXE, *L'Archiduc D'Ete*, *Summer Beurre*, *Summer Doyenne*, *Summer St. Michael*, so called near Boston, *Bloodgood Pear* of New York.—Fruit medium size, smooth, bright yellow at maturity, with a faint blush next the sun ; form rather ovate, tapering towards the stalk ; flesh perfectly melting, rich and juicy. The tree bears young and most profusely, and matures its fruit early in September.

19. **AUTUMN COLMAR**.—Fruit middle size, oblong ; of a pale yellow colour, with much thin russet next the sun ; flesh rather gritty but mellow, with a sugary and slightly perfumed juice.

A new, hardy, Flemish variety, ripening its fruit early in October.

20. BELLE ET BONNE, *Schone und gute, Belle de Bruxelles*.—“A harvest pear, magnificent,” very large, globular, depressed, the stalk long; skin greenish yellow, but next the sun yellow, with spots of russet; flesh white, sweet, exceeding rich and agreeable; perfumed. The tree is very productive, and the fruit ripens in September.

21. MOOR FOWL EGG.—Fruit small, globular, ovate, swollen in the middle, orange brown next the sun, with spots of russet; flesh yellowish white, a little gritty, tender mellow, saccharine, a little perfumed. This is a hardy Scotch fruit, ripe end of September.

22. BEZY DE MONTIGNY, *Trouve de Montigny*.—Fruit medium size, pyramidal, compressed towards the summit; colour yellow; flesh white, a little gritty, very melting; sweet, musky. It succeeds on the quince. Ripe in September.

23. ELTON.—A pear of medium size, oval form, broadest towards the crown; colour greenish russetty gray, but russetty orange next the sun; flesh breaking, and of an excellent flavour. Ripe in September.

24. DELICES D'ARDENPONT, *Delices d'Hardenpont, De Toulouse*.—Fruit medium size; skin a little thick, smooth, green, but yellow at maturity; flesh white, nearly melting; juice pleasant, sweet and abundant. Ripe in October.

25. SECKLE.—An excellent native fruit, size varying from small to medium; colour varying from yellowish to brownish russet; but generally red next the sun; flesh of a melting, spicy, and of a most extraordinary rich and delicious flavour. It ripens the middle of September, and the fruit grows in clusters, in great abundance.

26. URBANISTE.—The fruit is pyramidally ovate; skin pale green, inclining to yellow; flesh white, but reddish yellow next the core; it is quite melting, juicy, and very sweet, with a little perfume. It ripens from the middle of September to November.

27. MARIE LOUISE.—Fruit oblong, tapering towards both ends; size varying from medium to large; skin nearly smooth, yellowish green, and cinnamon coloured russet; flesh white, melting, juicy and rich. It ripens in October, and is described as an excellent fruit.

28. DOYENNE SANTELETE.—A new fine handsome Flemish pear. Fruit above the middle size, pyramidally oblong; skin pale green, speckled with gray russet; flesh white, a little gritty, but tender; juice saccharine, with a slight musky perfume. The tree is hardy, and ripens its fruit early in October.

29. GRAY DOYENNE, *Red Doyenne, Doyenne Gris, Doyenne Roux, Doyenne d'Automne*.—Fruit medium sized; colour bright crimson russet, but red next the sun; flesh yellowish white, melting, saccharine, rich and of excellent flavour. Season, October and November.

30. ASHTON TOWN.—The fruit is small, of a greenish colour,

spotted with russet ; the flesh is melting, high flavoured, richly sugared and perfumed. It is in perfection in October and November.

31. AUTUMN BERGAMOT, *Common Bergamot, York Bergamot*.—Fruit globular depressed, the skin rough, yellowish green, and dull brown ; flesh pale, melting, juicy, sugary, and perfumed ; ripe in September and October. A first rate pear.

32. GOLDEN BEURRE OF BILBOA.—Fruit of medium size ; oblong ; colour a bright golden yellow, with patches of russet ; perfectly melting and of fine flavour. A beautiful fruit, a great bearer, and worthy of cultivation.

33. HACON'S INCOMPARABLE.—Fruit middle sized, of pale yellow colour, mixed with green, partially covered with orange russet ; flesh yellowish white, slightly gritty, but very tender, juicy, sweet and rich ; and possessing a high musky and perfumed flavour. The tree is a great bearer, and the fruit excellent, and is in perfection in November and December. A silver medal was given for a specimen of this fruit, as a prize, in England, 1830.

34. DUCHESS OF ANGOULEME, *Duchesse d'Angouleme*.—A pear of first rate excellence. Form roundish, oblong, tapering towards the stalk ; skin dull yellow, with broad russet patches ; flesh rich, melting, very juicy, and high flavoured, with a most agreeable perfume. Specimens of this fruit have been seen in England, weighing twenty-two ounces. In perfection in November and December.

35. GREEN SYLVANGE, *Sylvange Vert, Bergamotte Sylvange*.—A most superior pear, above the medium size, of green colour, skin rough, and speckled with gray or black. The flesh is greenish near the skin, white in the centre, soft, saccharine and juicy. Fruit in perfection from October to January. The tree is a great bearer, and specimens of the fruit have been known to weigh thirteen ounces.

36. BISHOP'S THUMB.—Fruit over medium size, very oblong ; it is twice as long as broad, and tapers to its summit ; colour dark green, and brownish red, with iron coloured russet ; flesh yellowish green, melting, juicy, rich and excellent ; ripening in October.

37. BROWN BEURRE, *Beurre Rouge, Beurre d'Or, Beurre Doie, Beurre du Roi, Beurre d'Amboise, Isambert, Red Beurre, Golden Beurre*.—This was formerly considered the best of all pears. Fruit rather large, of greenish yellow, and dusky red colour, covered with thin russet ; flesh melting, buttery, rich and excellent. In perfection in October, and will often keep till January.

38. PRINCESSE D'ORANGE, *Princess of Orange*.—The fruit is roundish ; the skin bright reddish orange russet ; flesh yellowish white, sugary and rich, in some seasons perfectly melting, but occasionally a little gritty. A beautiful pear, and of good quality in October.

39. SWAN'S EGG.—Fruit small, oval, turbinate ; colour yellowish green and dull russetty brown ; flesh tender and melting, with a rich, saccharine, musky flavour. An excellent fruit, ripe in

October. The tree is remarkably tall, upright, vigorous, and productive.

40. **CHARLES D' AUTRICHE**, *Charles of Austria*.—A fine and beautiful fruit, large, three and a half inches long, and three inches broad; colour greenish yellow, with brown spots and partly russeted; flesh white, melting, juicy, and delicious. Ripe in October.

41. **GANSEL'S BERGAMOT**, *Broca's Bergamot*, *Ives's Bergamot*, *Bonne Rouge*.—Fruit varying from medium size to large; ovate, flattened; colour dull green, slightly red next the sun; flesh white, melting, sweet, rich and high flavoured. A delicious pear, ripe in October and good till Christmas.

42. **NAPOLEON**, *Medaille*, *Sauvageon Liart*.—Fruit large, form of the Colmar; skin smooth; colour bright green, but at maturity, pale green; flesh very melting, with an unusual abundance of rich agreeable juice. At perfection in October and November.

43. **BEURRE D'AREMBERG**, *Beurre d'Arembert*, *Duc d'Aremberg*, *Poire d'Aremberg*, *Beurre Deschamps*, *Beurre Orphelins of Deschamps*.—The English and French writers speak of this pear as one of the best in cultivation. The tree is a great bearer, comes early into cultivation, and the fruit will keep till March. Fruit large, turbinate; skin of a delicate pale green, dotted with russet, which becomes a deeper yellow at maturity; flesh whitish, fine, very juicy, perfectly melting, and very extraordinarily rich, sweet, high flavoured and excellent.

44. **EASTER BERGAMOT**, *Bergamotte Bugi*, *Bergamotte de Paques*, *Bergamotte d'Hiver*, *La Grillieu*, *Paddington*, *Tarling*, *Winter Bergamot*.—Fruit rather large, short, roundish turbinate; swollen at the crown; colour yellow at maturity; half beurre; sweet and good. In perfection from December to May.

45. **FRANCREAL**, *Fin*, or *d'Hiver*, *Francreal d'Hiver*.—The tree is very productive; it succeeds well on the quince; fruit globular; colour yellowish green, but brownish red next the sun, and a little russety; good to cook from October to mid-winter.

46. **BEURRE DIEL**, *Diel's Butterbirne*, *Dorothee Royale*, *Beurre de Gelle*, *Beurre Royale*, *Poire de Melon*.—This ranks amongst the best of pears. The tree is of vigorous growth; fruit when in perfection, four inches long, and three inches broad; the skin at maturity is bright orange, with reddish russet; flesh clear white, tender, melting, and juicy, and of a delicious aromatic flavour; from November to January.

47. **BEURRE RANCE**, *Beurre Epine*, *Hardenpont de Printemps*.—This is said to be a first rate pear. The tree is vigorous and a good bearer; fruit middle sized, oblong; skin deep green; flesh green, melting, having a delicious rich flavour, with very little acid. It shrivels in ripening, but will keep till April.

48. **GLORIA**, *Colmar d'Hiver*.—A name implying every thing that is excellent. A melting pear of superior quality; shape varying from nearly globular to pear shaped; colour yellowish green; flesh firm, juicy, and of excellent flavour; at perfection in January and February.

49. **HOLLAND BERGAMOT**, *Bergamotte d'Holland, D'Alencon.*—Fruit very large, globular, but broadest at the crown, flattened; of greenish yellow colour; flesh half breaking, juicy, and high flavoured; it keeps till May, and succeeds on the quince.

50. **SAINT GERMAIN**, *Inconnue la Fare.*—This celebrated ancient fruit is large, of a green colour, covered with russet spots; at maturity a yellowish cast; its flesh very melting, juicy, saccharine, slightly acid, and delicious; it ripens in November, and may be kept till March.

51. **MONARCH.**—A new pear, considered by Mr. Knight as without a rival. The tree is represented of rapid growth, and an abundant bearer; fruit large, of an extraordinary musky flavour, and deemed excellent for Perry. Season in England, December and January.

52. **COLMAR**, *Poire Manne, Bergamotte Tardive, Incomparable.*—This fruit is rather large; skin smooth, of a green colour, changing to yellow at maturity; form pyramidal; flesh melting, juicy, saccharine, and of excellent flavour; the fruit is in perfection from November to February.

53. **EASTER BEURRE**, *Bergamotte de la Pentecote, Beurre d'Hiver de Bruxelles, Doyenne d'Hiver, de Bruxelles, Bezi Chaumontelle Tres Gros.*—Of all the late keeping pears, this is considered the best, (for England.) Fruit large, roundish, oblong; colour green, but yellow at maturity, with specks of russet brown; flesh yellowish white, perfectly buttery and melting, and extremely high flavoured; it is eatable in November, and will keep till May; it is a most profuse bearer, on a quince stock.

54. **PASSE COLMAR**, *Fondante de Panisel, Passe Colmar Gris dit Precel, Poire Precel, Passe Colmar Epineux, Beurre Colmar Gris dit Precel, Beurre d'Argenson, Chapmans.*—A most valuable pear, of medium size, conical, flattened next the eye; skin at maturity yellowish, sprinkled with russet, a tinge of red next the sun; flesh yellowish, melting, juicy, rich and excellent. The tree is a good bearer, and the fruit is in perfection from November to February.

55. **FLEMISH BON CHRETIEN**, *Bon-Chretien Nouvelle Espece.*—Fruit large, oblong, turbinate; skin at maturity yellow, mottled with russet next the sun; flesh yellowish white, breaking, a little gritty, but mellow at maturity; juice saccharine, with a slight musky perfume; season from November till February.

56. **GLOT MORCEAU**, *Gloux Morceaux.*—A very large Belgic variety, of great excellence; fruit of ovalish form, pale green colour, inclining to yellow, with russetty specks and blotches; flesh whitish, firm, very juicy and excellent; in perfection from November to March.

57. **POIRE DE ANANA**, *Poire d'Ananas.*—A new Flemish variety, held in high esteem; a winter fruit, of medium size, very handsome, melting, with a fine pine apple flavour, (hence its name Ananas;) ripening in November, and good till March; the tree is of dwarfish habits, and flowering freely, and at the extremity of the branches.

58. **WINTER BONCHRETIEN**, *Bonchretien d'Hiver, Poire d'An-*

goise.—Very large, colour at maturity yellow, with a slight stain of red next the sun; form truncated, or pyramidal; flesh breaking, rather sweet and juicy. This variety, though enormously large, is very liable to crack, but is sometimes preserved sound till May.

59. CHAUMONTEL, *Bezy de Chaumontelle*, *Beurre d'Hiver*.—This noble old variety is a fruit varying in size, from large to very large; its colour at maturity yellow, tinged with red next the sun; its form variable; flesh melting, juicy, sweet, musky, excellent; season from November to February.

60. CARDINALE, *Poire d'Amiral*, *Admiral*.—The tree is of medium vigour, its young wood of medium size, and of a red colour; a superb oblong pear, of a pyramidal form; yellow in the shade, but beautiful red next the sun; flesh white, half melting, coarse grained, but very juicy, sweet and agreeable; it keeps till March, and merits to be better known.

PLUMS.

1. PRECOCE DE TOURS, *Early Tours*.—The tree is vigorous and fertile; fruit small, oval, dark purple, covered with fine bloom; flesh greenish yellow, tender, juicy, and of very agreeable flavour; one of the best early varieties, and very productive; ripe at the end of July.

2. GREAT DAMASK VIOLET OF TOURS, *Gros Damas de Tours*.—This plum is of dark purple colour, covered with bloom; the flesh is whitish, firm, sweet, pretty rich, and of a very pleasant flavour; it ripens towards the end of July, and is in perfection early in August.

3. MOROCCO, *Early Black Damask*, *Black Damascus*, *Black Morocco*, *Early Damask*, *Early Morocco*.—This is considered as one of the best of early plums. The tree is very hardy and productive; fruit middle sized, roundish; skin deep blackish purple, covered with a light blue bloom; flesh greenish yellow, juicy, rich and high flavoured; ripe early in August.

4. NECTARINE PLUM, *Caledonian*, *Howell's Large*, *Prune Pêche*.—One of the most beautiful plums known; large, nearly round; the skin at maturity varies from red to crimson, covered with azure bloom; flesh yellowish, coarse grained, astringent; juice abundant, and of mild, pleasant flavour; at maturity early in August.

5. JAUNE HATIVE, *Prune de Catalogne*, *Prune de St. Barnabe*, *Catalonian*, *White Primordian*, *Amber Primordian*.—Fruit small, round, and of a yellow colour; ripens in the end of July; flesh mealy; tree a great bearer; and the fruit chiefly esteemed for its precocity.

6. BLUE PERDRIGON, *Perdrigon Violet*.—This plum may be ranked among the choice varieties; its form is nearly round, of medium size, and of purple colour; its flesh is greenish, partially melting, and moderately sweet and rich; it ripens at about the middle of August.

7. **EARLY ORLEANS**, *Hampton Court*.—Fruit of largish size and oval form; of a red colour; ripening about the middle of August; the flesh is of a rich juicy flavour, and the tree a great bearer.

8. **WILMOT'S NEW EARLY ORLEANS**, *Wilmot's Orleans*.—This plum is of medium size and round form; its sature deep; of a dark purplish hue, covered with a fine bloom; the flesh is greenish yellow, of excellent flavour, sweet, combined with a pleasant acid. It is a handsome plum, ripening early in August.

9. **NEW-YORK PURPLE**, *Brevoort's Purple Bolmer*.—An excellent fruit, raised from a seed of the Washington Plum, that had been impregnated with the pollen of the Blue Gage. The fruit is very large, of a rich and brisk flavour; the flesh adheres to the stone; ripe about the middle of August.

10. **BLUE GAGE**, *Azure Hative*.—This fruit is of medium size, and of a roundish, oval shape; skin violet, powdered with a light blue bloom, with pale yellow dots; flesh greenish amber, rich, sugary and high flavoured; ripe in August.

11. **CHESTER**, *Matchless*.—This plum is of oval form, and of a dark blue colour, with a partial violet bloom; the flesh is dark yellow, rich, and full of sweet and pleasant juice; the fruit ripens in August, and the tree produces abundantly.

12. **FOTHERINGHAM**, *Sheer Plum*.—This fruit is of large size, the form oblong, with a deep sature; the skin is of a deep red colour; the flesh is white, firm and crisp, rich, juicy, and of fine flavour; at perfection in August.

13. **ROYAL DE TOURS**.—The tree is of extraordinary vigorous growth; its principal stem rises vertically; the fruit is globular, of red violet colour, covered with azure bloom; flesh yellow, fine, good; juice abundant and sweet; ripens in August.

14. **MAITRE CLAUDE**.—This fruit is of large size and round form; skin of a bright yellow colour, with dark red spots, and is covered with a thin white bloom; the flesh is pale yellow and firm, with sweet and sprightly juice; ripens in August.

15. **WASHINGTON**, *New Washington, Bolmer's Washington, Franklin, Imperial Gage, Superior Gage*.—A very large, globular plum, inclining to oval; greenish yellow next the sun, with crimson specks, covered with a rich bloom. This plum has sometimes weighed over four ounces; its flesh is yellow and firm, sweet and delicious, but not considered equal in flavour to the Green Gage; ripe in August.

16. **GREEN GAGE**, *Great Queen Claudia, Dauphine, Grosse Reine Claude, Abricot Vert, Verte Bonne, Large Green Claudia, Gros Damas Vert*.—A middle sized, round fruit, of a yellowish green colour, and purplish russety red next the sun; the flesh is of a greenish hue, melting, with abundance of very sweet and highly perfumed juice, of an exquisite taste; it arrives at maturity towards the end of August.

17. **LUCOMBE'S NONSUCH**.—This plum is large, compressed at the summit and base, its breadth two inches; its colour at maturity, as well as its form, resembles the Queen Gage, but more streaked with yellow; flesh firm, rich and juicy; at maturity by the end of August; tree a good bearer.

18. **ITALIAN DAMASK**, *Damas d'Italie*.—This fruit is rather large, its form globular, a little flattened at the base; blue or violet next the sun, and covered with a purple bloom; its flesh is yellow, rich and juicy, and the tree, which matures its fruit by the end of August, is very productive.

19. **BLEECKER'S GAGE**.—This plum is stated to have been raised by the Rev. Mr. Bleecker, of Albany, from the stone of a German Prune; it is described as a large, globular fruit, of excellent quality, and a great bearer.

20. **COOPER'S LARGE RED**, *Cooper's Large American*.—This plum is of extraordinary size, measuring within an eighth of two inches in each direction; the skin is of a fine dark purple colour; the flesh is yellowish green, rich, juicy, and of pleasant flavour; the fruit makes excellent preserves, if gathered in August; its great defect is an inclination to rot.

21. **KIRKE'S PLUM**.—This variety is said to be as hardy and prolific as the Orleans, as handsome as the Damask, and as good as the Green Gage. Fruit large, roundish, oval; skin covered with a close, firm, azure bloom, through which appears a few golden specks; flesh greenish yellow, firm, juicy and rich; in perfection the early part of September.

22. **RED DIAPER**, *Diapree Rouge*, *Roche Corbon*.—One of the most beautiful plums known; form oval, two inches and one third in length, a little pear shaped; colour bright red, with a partial degree of bloom, and speckled with dots of deeper red; flesh greenish yellow, soft and sweet, but coarse; its quality does not correspond with its appearance, but they make excellent prunes, if gathered early in September.

23. **GOLIATH**, *Goliah*, *St. Cloud*.—This fruit is very large, sometimes weighing four ounces; the skin is a deep reddish purple. the flesh pale, firm, and well flavoured, but not rich; the tree is a great bearer, and the fruit much used for cooking; ripe in September.

24. **IMPERIAL DIADEM**.—A large fruit, admirably adapted for culinary purposes; shape oval; colour pale red, but dark when mature, which is about the middle of September; it is of good flavour, and highly perfumed.

25. **JERUSALEM**.—The tree is vigorous and productive; fruit beautiful; its form oval; skin thick, blue next the sun, covered with an elegant bloom; flesh yellowish, coarse grained, but melting; juice abundant, high flavoured and sweet; a large, handsome fruit, ripe early in September.

26. **DIAMOND PLUM**.—Some consider this as the largest plum known; its colour is a dark purple; in form it resembles the Magnum Bonum, but its flavour is considered rather superior; the tree, which grows vigorously, originated with Mr. Hooker, in Kent, England.

27. **RED QUEEN MOTHER**.—This plum is large, its colour bright red, covered with pale bloom; its flesh is yellow, sweet and excellent, ripening in September.

28. **LA ROYALE**, *Royale*.—A large and excellent plum, of a

homely dull red colour, but concealed by a thick violet or azure bloom ; flesh fine, yellowish green, firm, juicy, high flavoured and delicious ; a superior plum, at maturity in September.

29. *MIMMS, Mimm's Plum*.—The fruit is very large, a little oblong ; colour bright purple, covered with thick bloom ; its flesh is yellowish green, tender, juicy, and very agreeably flavoured ; ripe in September.

30. *SURPASSE MONSIEUR*.—A large fruit, of oval form, and of a dark red purplish colour, raised by a Mr. Noisette ; it is said to be more beautiful and perfumed than the Monsieur, and the tree yields suckers which produce fruit in all their beauty and excellence.

31. *PURPLE GAGE, Reine Claude Violette, Die Violette, Konigen Claudie*.—This fruit is large, almost round, and considered in France as one of the finest varieties ; its skin is of violet purple colour, with pale yellow dots, and covered with a light blue bloom ; flesh greenish amber, rich, saccharine and high flavoured ; at maturity in September.

32. *VIRGINALE*.—This fruit ranks among the best of plums ; its shape is round, colour yellowish, touched with violet or rose, and covered with dense bloom ; flesh melting, juice abundant, and very agreeable.

33. *RED MAGNUM BONUM, Imperial Violette*, of the French.—A large, oval plum, of deep red colour, covered with blue bloom ; flesh yellowish, harsh and acid ; consequently good for cooking, preserves, &c. Fit for use in September.

34. *RED PERDRIGON, Perdrigon Rouge*.—An excellent plum, of the first class, of medium size, oval shape, and fine red colour, with gold coloured dots and a fine bloom ; flesh bright yellow, transparent ; juice sweet and delicious. Peeled and dried in September, it makes excellent prunes.

35. *WINESOUR, Rotherham*, of the old gardens.—This plum is excellent for sweetmeats ; it is of smallish size, oblong form, and of dark purple colour ; the flesh is yellow, juicy, and of a pleasant acid flavour ; the fruit is fit for use by the end of September ; the tree is a great bearer, and will grow on any soil, but flourishes most on limestone or gravel.

36. *APRICOT PLUM, Prune Abricote, Abricotee de Tours*.—The fruit is large, its form globular, depressed, divided by a deep suture ; whitish yellow, but faint red next the sun, and covered with bloom ; its flesh is firm, juicy, sweet, musky and excellent ; it ripens in September.

37. *COE'S GOLDEN DROP, Coe's Imperial, Bury Seedling, New Golden Drop, Fair's Golden Drop*.—Raised by Mr. Coe, of Bury, Norfolk, Eng. The tree is vigorous, fruit of medium size ; skin greenish yellow, spotted with violet and crimson ; flesh gold colour, rich and excellent ; the fruit ripens at the end of September, and will keep several weeks. A first rate fruit.

38. *PRINCE'S IMPERIAL GAGE, Prince's White Gage*.—This tree was originated at the Flushing nursery, from a seed of the Green Gage. The fruit is one of the largest of its class ; the skin at

maturity is yellow, dotted with red ; the flesh is rich, luscious, and of excellent flavour, and makes fine preserves, if gathered towards the end of August ; at maturity in September.

39. SAINT CATHARINE.—A medium sized, oblong fruit ; skin bright gold colour, spotted with red at maturity, and covered with bloom ; flesh yellow, tender, sweet, and of fine flavour ; ripens in September.

40. LATE WHITE DAMSON, *White Damascene*, *White Winter Damson*, *Frost Plum*.—This variety is very productive, the fruit hanging in numerous clusters along the branches. The fruit is oval, of a greenish white colour, marked with brown spots ; the flesh is juicy, and of pleasant flavour ; it ripens in September, and continues on the tree several weeks.

41. WHITE MAGNUM BONUM, *Imperiale Blanche*, *Egg Plum*, *White Mogul*, *White Holland*.—This fruit is of extraordinary size, oval, yellow, covered with pale bloom ; the flesh yellow, firm, acid and austere ; excellent for cooking and preserves, in September.

42. WHITE PERDRIGON, *Perdrigon Blanc*.—A middle sized, oblong fruit, of a pale yellow, with red spots, and covered with white bloom ; flesh yellow, rich, saccharine and juicy ; it ripens in September.

43. IMPERATRICE.—One of the best of late plums ; fruit medium size, oval ; skin fine violet, covered with bloom ; flesh yellowish next the sun, a little firm, and very sweet, rich and juicy at maturity, which is from October to December.

44. PRUNE SUISE, *Semiana*, *Prune d'Altesse*, *Monsieur Tardif*.—Fruit very handsome, round, flattened ; colour varving from bright violet red, to deep blackish blue, and covered with azure bloom ; flesh greenish yellow, crackling and melting ; juice very abundant and delicious ; an excellent fruit, ripening in September and October.

45. DOWNTON IMPERATRICE.—A superior late plum, of medium size ; skin dark yellow, and very thin ; the flesh yellow, soft, juicy, with a high flavoured acidity ; at perfection in October.

46. LATE BLACK DAMSON, *Damas Noir*, *Damas Noir Tardif*.—An excellent fruit, of dark purple colour, almost black, and covered with bloom ; the flesh is rather firm, yellowish green, sweet, and slightly perfumed when at maturity.

47. LATE PURPLE DAMSON, *Purple Winter Damson*, *Blue Damascene*, *Blue Damson*.—This variety is in great esteem for preserves, and generally commands a high price. It is of a dark purple colour, covered with bloom ; the flesh has rather too much acidity for a table fruit, but this tartness gives it an agreeable flavour when cooked.

48. SHROPSHIRE DAMSON, *Damson Plum*.—This is a large variety of the damson, of fine quality and rich flavour, most excellent for preserves. It ripens in October and November, and the tree produces abundantly.

49. HULING'S SUPERB, *Keyser's Plum*.—This plum is of monstrous size, and has been known to weigh nearly four ounces ;

it is of roundish form, and a greenish yellow colour ; the flesh is sweet, rich and excellent. It was raised from seed by Mr. Keyser, of Pennsylvania, and brought into notice by Dr. Wm. Hulings, of that State.

50. LATE CHALONS, *Tardif de Chalons*.—This fruit is nearly oval, of a whitish yellow hue, tinged with red, and covered with bloom ; the flesh is yellowish, melting and very juicy ; ripe in October.

In conclusion, it may be necessary to remind the reader, that, as the preceding description of fruits is only intended as a continuation of the article "on the choice of fruit trees in the nursery," brevity was essentially requisite. It is presumed, however, that the explanation given will be found sufficient to direct the public attention to the most esteemed sorts of fruit. Those who may wish for more extensive information on this part of our subject, are referred to the works already alluded to, also to a work about to be published, entitled, "A Guide to the Orchard and Fruit Garden, or an Account of the most valuable Fruits cultivated in Great Britain, by George Lindley, C. M. H. S., edited by John Lindley, F. R. S., &c. First American, from the last London edition, containing notes, explanatory and practical, with numerous additions on the propagation, culture, pruning and training of Standards, Open Dwarf, and Espalier Fruit Trees, adapted to the climate of the United States, with additions of the most valuable American Fruits, and other matters, useful to the American Horticulturist, by Michael Floy, Gardener and Nurseryman, New-York, and C. M. H. S., of London."

The following article was prepared for the February number of the "New-York Farmer, and American Gardener's Magazine," and is respectfully submitted as an appendage to this work, by the author.

THE MATRIMONIAL GARDEN.

MAN is formed for social enjoyment, and if it be allowed that "it is not good for man to be alone," it is equally true that it is not good that woman should be alone; hence a union of interests indicates a union of persons for their mutual benefit. By this union, a sort of seclusion from the rest of our species takes place; and as a garden is a retired apartment, appropriated to culture and improvements, the married state may not be inaptly compared with it in many respects.

It is good and honourable for the human species prudently and cautiously to approach this delightful enclosure. Its entrance in general is extremely gay and glittering, being strewed with flowers of every hue and every fragrance, calculated to charm the eye and please the taste; but they are not all so; and as there are many persons who may wish to enter this garden at some time or other, who are yet strangers to its various productions, their attention should be directed to the cultivation of those plants which are beneficial, and to the avoiding or rooting up of those which are injurious.

And first, let me caution adventurers in this garden not to dream of permanent happiness; if you should so dream, experience will soon make you wiser, as such happiness never existed but in visionary heads. If you are desirous that this garden should yield you all the bliss of which it is capable, you must take with you that excellent flower called GOOD HUMOUR, which, of all the flowers of nature, is the most delicious and delicate; do not drop it or lose it, as many do soon after they enter the garden—it is a treasure that nothing can supply the loss of. When you get to the end of the first walk, which contains about thirty steps, commonly called "*the Honey Moon Path*," you will see the garden open into a vast variety of views, and it is necessary to caution you to avoid many productions in them which are noxious, nauseous, and even fatal in their nature and tendency, especially to the ignorant and unwary. There is a low, small plant, which may be seen in almost every path, called INDIFFERENCE.—This, though not perceived in the entrance, you will always know where it grows, by a certain coldness in the air which surrounds it. Contrary to the nature of plants in general, this grows by cold and dies by warmth; whenever you perceive this change in the air, avoid the place as soon as you can. In the same path is often found that baneful flower called JEALOUSY, which I advise you never to look at, for it has the strange quality of smiting the eye that beholds it, with a pain that is seldom or never got rid of. Jealousy is a deadly flower; it is the aconite of the garden, and has marred the happiness of thousands.

As you proceed, you will meet with many little crooked paths. I advise you as a friend, never to go into them, for although at the entrance of each, it is written in large letters, **I AM RIGHT**, if you do enter, and get to the end of them, you will find the true name to be **PERVERSENESS**. These crooked paths occasion endless disputes, and as it is difficult to make the crooked straight, it is better to avoid them altogether, lest, as it sometimes happens, a total separation be the consequence, and you take different paths the rest of your lives. Near this spot, you will meet with a rough, sturdy plant, called **OBSTINACY**, which bears a hard, knotty fruit, that never digests, and of course must injure the constitution; it even becomes fatal, when taken in large quantities. Turn from it, avoid it as you would the cholera.

Just opposite to this, grows that lovely and lively shrub, called **COMPLIANCE**, which, though not always pleasant to the palate, is very salutary, and leaves a sweetness in the mouth; it is a most excellent shrub, and produces the most delicious fruit.—Never be without a very large sprig in your hand; it will often be wanted as you go along, for you cannot be happy without it in any part of the garden.

In one of the principal compartments, stands a very important plant, called **ECONOMY**; it is of a thriving quality; cultivate this fine plant with all your care; it adorns and enriches at the same time. Many overlook it, some despise it, and others think that they shall never want it; it is generally overlooked in the gaiety and levity with which people enter this place, but the want of it is generally paid for with bitter repentance. There are two other plants of the same species, which are very closely connected, called **INDUSTRY** and **FRUGALITY**, and I must take leave to tell you that, unless both the male and the female partake largely of their branches, very little success can be expected; in this they must both unite. Take care that you provide yourself and partner with a supply of each as soon as possible after you enter the garden.

There are two or three paths which run much into one another, and deserve the closest attention of the softer sex; I mean **REGULARITY**, **EXACTNESS** and **NEATNESS**. Do not think as some do, that when you have once got into the garden, you may be neglectful of these paths. Remember that your companion will see your neglect, which will affect his eye, and may alienate his heart. Enter on these departments then as soon as you enter the garden, and when you are once fairly in, you are in for life; the danger is, that if you do not get into them at an early period, you will not find them afterwards. Near these walks is to be found that modest plant, called **HUMILITY**:

It is the violet, "doom'd to blush unseen,
And shed its sweetness on the desert air."

It appears of little worth in itself, but when joined with other virtues, it adds a charm to life, and spreads a fragrance around its

wearer. Cultivate then, with all your care, this sweet little plant, and you will find it prevent the growth of all poisonous and noxious weeds.

Allow me also to drop a hint on the subject of *cultivation*, as connected with *propagation*, as that most probably will be your employment in this garden sooner or later. Should you have the rearing of young plants, remember that they are frail in their nature, and liable to be destroyed by every blast, and will demand all your care and attention. Should you be witness to a blast on its dawning beauties, Oh, how your fond heart will bleed with tenderness, affection and sympathy! The young shoot will naturally twine around all the fibres of your frame. Should it live and thrive, spare no pains to "train it up in the way it should go." Weed it, water it, prune it; it will need all the cultivator's skill. Without this, many weeds and baneful plants will grow up with it, and blast your fondest hopes. Be ever mindful that this is a *trust* for which both parties are accountable. Without careful cultivation, what can you expect but the most luxuriant growth of unruly appetites, which, in time, will break forth in all manner of disgraceful irregularities? What, but that **ANGER**, like a prickly thorn, will arm the temper with an untractable moroseness? That **PEEVISHNESS**, like a stinging nettle, will render the conversation irksome and forbidding? That **AVARICE**, like some choking weed, will teach the fingers to gripe, and the hands to oppress? That **REVENGE**, like some poisonous plant, replete with baneful juices, will rankle in the breast, and meditate mischief to its neighbour? While unbridled **LUSTS**, like swarms of noisome insects, taint each rising thought, and render "every imagination of the heart only evil continually?" Such are the usual products of unrestrained nature! Such the furniture of the uncultivated mind!

By all means, then, pay due attention to culture. By suitable discipline clear the soil. By careful instruction implant the seeds of virtue. By skill and vigilance prune the unprofitable and over-luxuriant branches:—"direct the young idea how to shoot,"—the wayward passions how to move. The mature man will then become the chief ornament of the garden. Around him **CHARITY** will breathe her sweets, and in his branches **HOPE** expand her blossoms. In him the personal virtues will display their graces, and the social ones their fruit—the sentiments become generous, the carriage endearing, the life useful, and the end happy and peaceful.

T. BRIDGEMAN.

Bowery Road, January 14, 1833.



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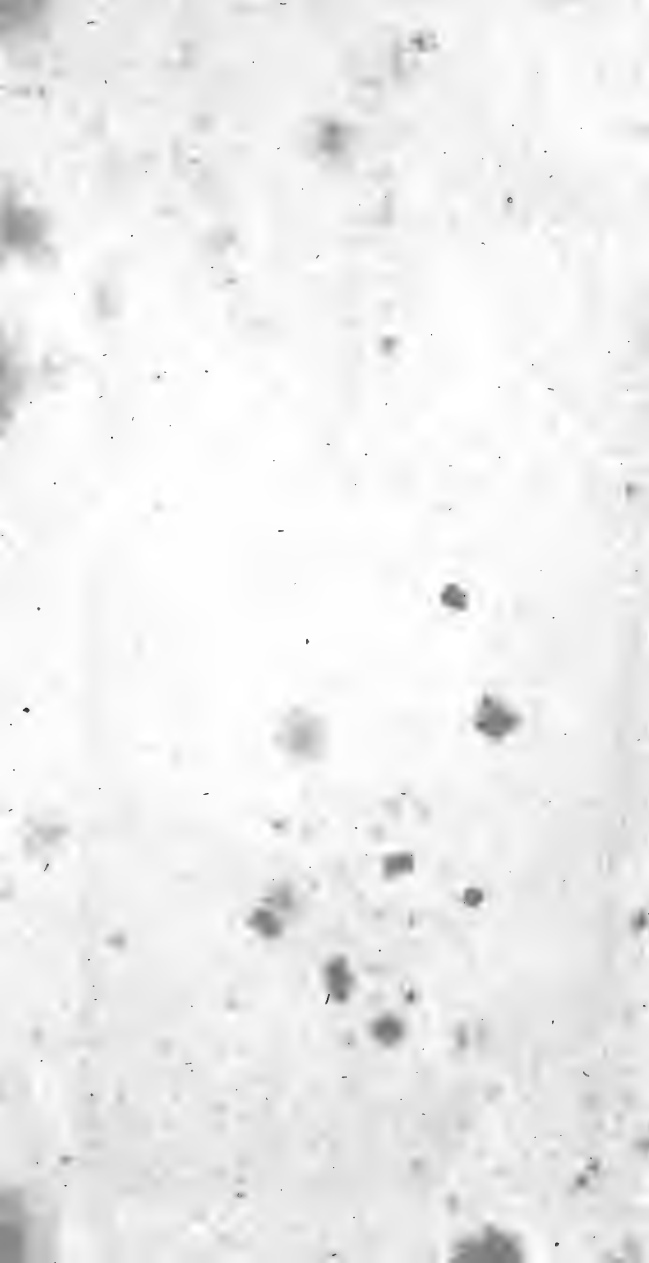
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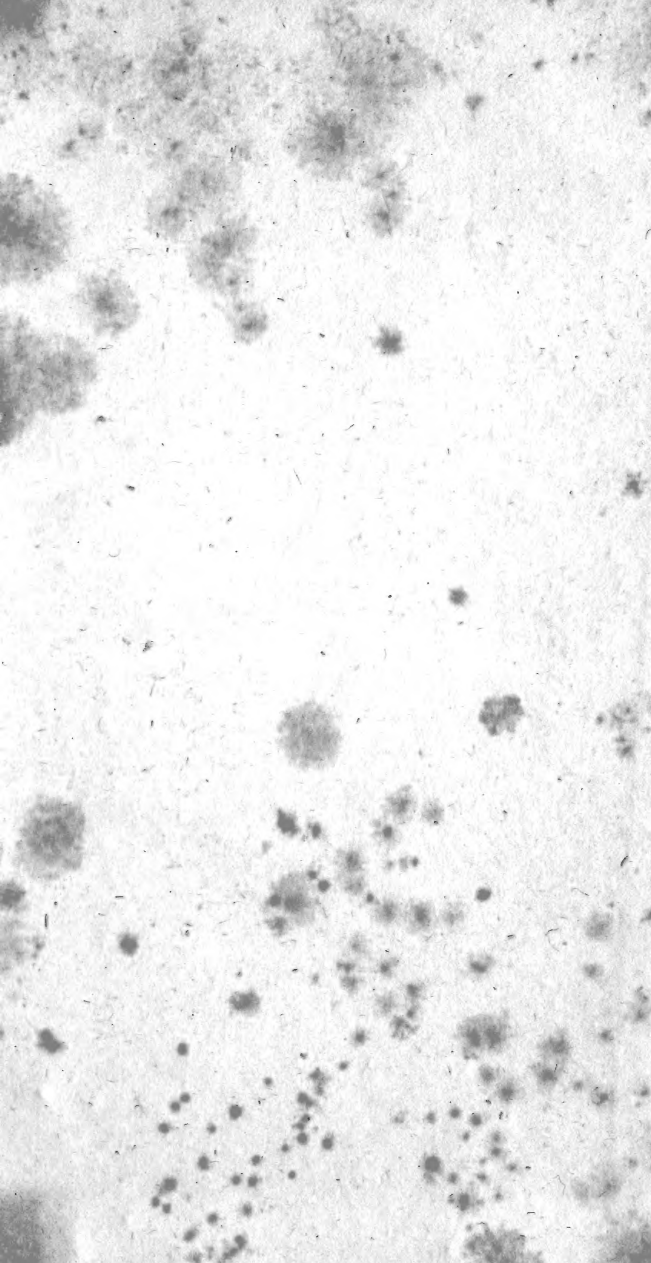
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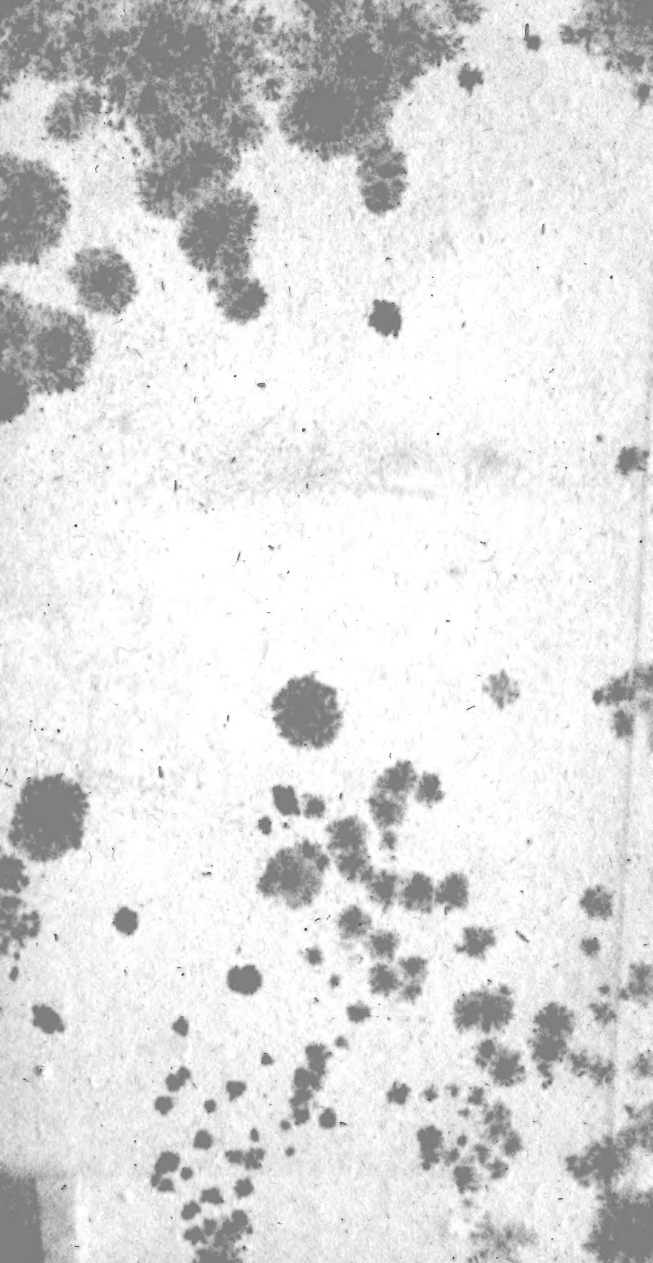
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